

# University News



Photograph taken on the occasion of the IVth Annual Convocation of Anna University. The Convocation Address was delivered by Shri R. Venkatraman, Union Minister for Defence.

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# UNIVERSITY NEWS

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and reviews are individuals and do  
not necessarily reflect the policies  
of the Association*

Editor

**M S RAMAMURTHY**

## Rani Durgavati Vishwavidyalaya hosts AIU Standing Committee at Jabalpur

A meeting of the Standing Committee was held on March 3 1984 at Rani Durgavati Vishwavidyalaya Jabalpur under the Presidency of Prof R C Paul, Vice-Chancellor, Panjab University, Chandigarh. Dr A K De, Director, IIT Bombay, Dr M S Gore, Vice-Chancellor, University of Bombay, Dr Gurbakhsh Singh, Vice-Chancellor, Delhi University, Prof P V Indiresan, Director, IIT Madras, Prof Amlan Datta, Vice-Chancellor, Visva Bharati, Prof K S Hegde, Vice-Chancellor, University of Mysore attended the meeting. Prof S V Arya, Vice-Chancellor, Jawaharlal Nehru Krishi Vishwavidyalaya, Jabalpur was specially invited to attend the meeting.

The following universities were admitted to the membership of AIU on a provisional basis for a period of three years.

- (i) Guru Ghasidas University, Bilaspur (MP)
- (ii) School of Planning & Architecture, New Delhi
- (iii) Banasthali Vidyapith, Banasthali (Rajasthan)
- (iv) Indian Veterinary Research Institute, Izatnagar (UP)

It was agreed to have a joint meeting of the Standing Committee with the members of the University Grants Commission in June/July, 1984. The following items are proposed to be discussed.

- (i) Guidelines for Model Act for Universities
- (ii) Functioning of Students Union
- (iii) A Uniform grading system for universities/institutes of higher learning.
- (iv) Allowances and service conditions of Vice-Chancellors and other university administrators,
- (v) Scale of Pay for Instructors Coaches for Sports/Physical Education,
- (vi) National Testing Service for grading the merit and aptitude of students on a uniform scale,
- (vii) Setting up of community colleges for making education relevant to the needs of the society,
- (viii) Revision of the pay-scale of postgraduate teachers and
- (ix) Guidelines for preparation of Seventh Five Year Plan proposals

The Standing Committee also suggested that the problems of foreign students in India may be examined in detail. The President of the Association would be constituting a Sub-Committee shortly for this purpose. Their eligibility for admission, language requirement, allowances, board and lodging facilities available to them in various educational institutions are some of the specific problems to be discussed. In order to strengthen the inter-action of general universities with the agricultural universities, it was suggested that the agricultural universities may develop the basic science departments further and the Faculties of Agriculture and related sciences in general universities be also expanded further provided proper and adequate facilities are made available to them. Considering the various problems of agricultural universities, IITs and technical institutions and institutions deemed to be universities, the President will be constituting separate Standing Sub-Committees to consider the specific problems of these institutions. It was also decided to hold a competition for designing a Flag for the AIU.

The University of Bombay will be collaborating with the Association of Indian Universities in preparing guidelines for non-plan grants for universities based on analysis of data of recurring

expenditure of universities. It is proposed to have a more detailed presentation for the Ninth Finance Commission so that universities may get adequate non-plan funds.

The following Sub Committees were also constituted

**(1) Service Conditions of the Vice-Chancellor**

- (i) Prof TKN Unnithan VC, University of Rajasthan
- (ii) Dr G C Gupta VC, Kurukshetra University
- (iii) Shri Ghulam Hussain VC, ND University of Ag & Tech, Faizabad
- (iv) Shri L D Kataria VC, HAU, Hissar
- (v) Dr D M Nanjundappa VC, Karnatak University
- (vi) Dr M Santappa VC University of Madras
- (vii) Dr B D Sharma, VC, NEHU, Shillong

**(2) Security Force in the Universities**

- (i) Prof K S Hegde VC, University of Mysore
- (ii) Shri G B K Hooja VC, Gurukul Kangri Vishwavidyalaya
- (iii) Dr V D Nagar VC, Devi Ahilya University
- (iv) Dr W U Malik, VC, University of Kashmir

- (v) Shri Syed Hashim Ali, VC, Osmania University
- (vi) Justice M P Kanade, VC, Marathwada University

**(3) A National Aptitude Testing System**

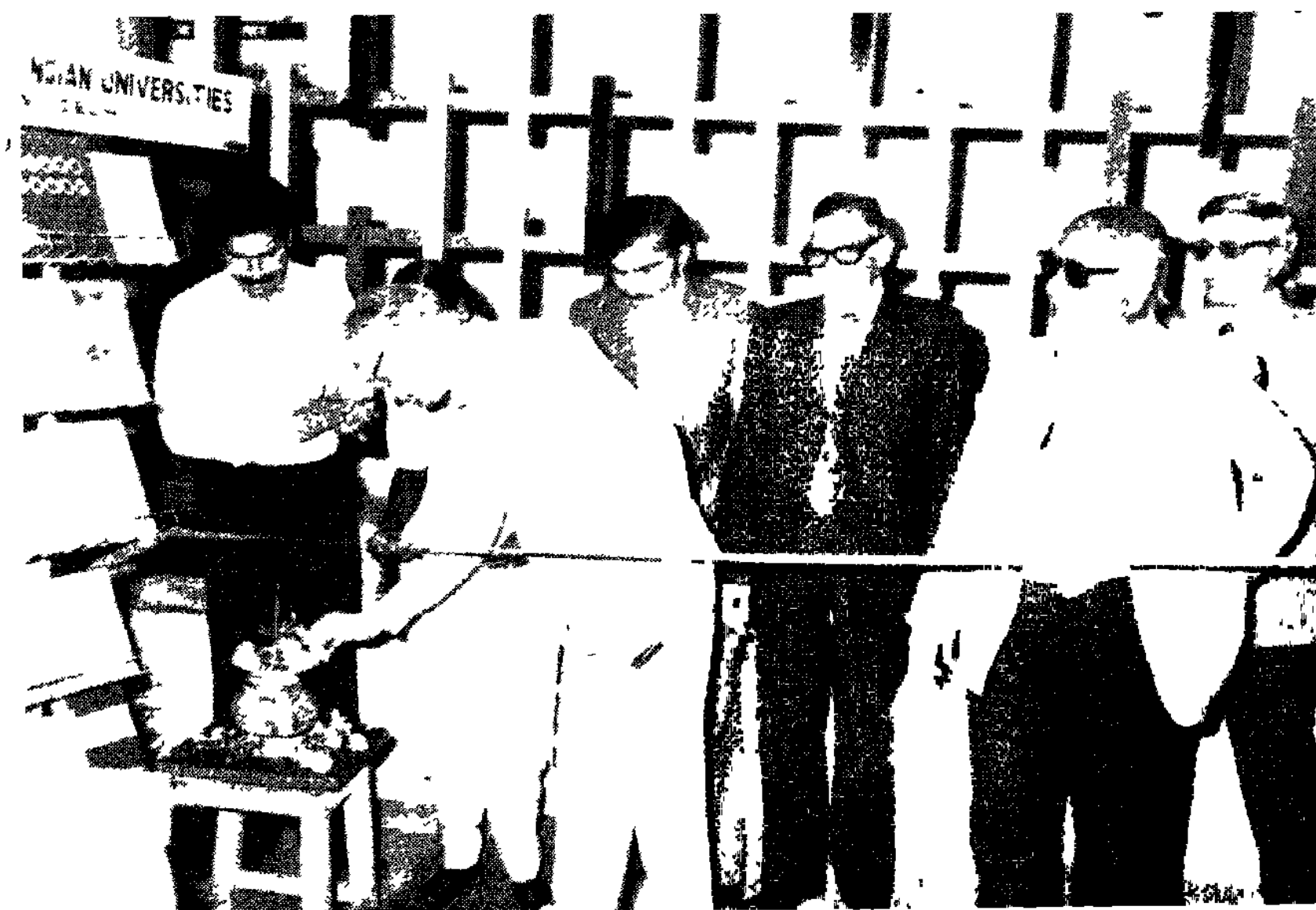
- (i) Prof Rais Ahmed, Vice-Chairman, UGC
- (ii) Prof M M Chakrabarty, VC, Jadavpur University
- (iii) Dr P L Malhotra, Director, NCERT
- (iv) Shri Suresh Mathur, Secretary UPSC
- (v) Shri P N Rau, Secretary, ICAR
- (vi) Shri Manmohan Singh Financial Adviser, Ministry of Education
- (vii) Shri S K Sharma Commissioner, M P Government

**(4) Opening of Community Colleges**

- (i) Dr (Mrs) Madhuri R Shah, Chairman, UGC
- (ii) Dr (Smt) Jyoti H Trivedi, VC, SNDT Women's University
- (iii) Dr S N Mehrotra, VC, Jodhpur University
- (iv) Dr M Aram, VC, Gandhigram Rural Institute
- (v) Prof Amlan Datta VC Visva Bharati

**(5) National Policy on University Libraries**

- (i) Prof Rais Ahmed Vice-Chairman UGC



*Prof M S Gore, Vice-Chancellor, University of Bombay, opening the AIU Book Exhibition organised at the time of the meeting of the Standing Committee of the AIU in Jabalpur*

- (ii) Dr S S Johl, VC, Punjabi University.
  - (iii) Dr Jagdish S. Sharma Librarian, Jammu University.
  - (iv) Prof P N Kaula, Visiting Prof of Library, Lucknow University
  - (v) Shri T S Deshpande, Librarian, Karnatak University.
  - (vi) Shri Girja Kumar, Librarian, JNU
  - (vii) Prof. A P. Srivastava, Librarian, Delhi University
  - (viii) Dr R Mittal, Librarian, Punjabi University
- (6) **Teachers' Training at College Level**
- (i) Prof G Ram Reddy, VC, APO University, Hyderabad
  - (ii) Dr N M Swani, Director, IIT Delhi
  - (iii) Shri P N Bhandari, VC, Mohanlal Sukhadia Vishwavidyalaya
  - (iv) Dr P L Malhotra, Director, NCERT
- (7) **AIU Building Committee**
- (i) President, AIU
  - (ii) Immediate Past President
  - (iii) Vice-President

- (iv) Prof B Dias Souza, Director, School of Planning & Arch, New Delhi.
- (v) Dr O P Jain, Consulting Engg., New Delhi (formerly Director, IIT Delhi)
- (vi) Prof N M Swani, Director, IIT Delhi
- (vii) Dr. Jagdish Naram, Secretary, AIU

A book exhibition was also organised on this occasion in Jabalpur from 1st to 3rd March, 1984. Prof M S Gore, Vice-Chancellor, Bombay University, inaugurated the exhibition. In addition to the various publications of the AIU, books published by member universities were also exhibited. This provided an opportunity to the residents of Jabalpur and teachers and students of educational institutions to see the publications of various universities. There was an encouraging response both from students and teachers for subscribing to the UNIVERSITY NEWS, which has become a weekly publication from this year.

The next Annual Meeting of the Association would be held on the campus of North Eastern Hill University, Shillong from 26th to 28th February, 1985. The Diamond Jubilee Session however would be held in Delhi in November/December, 1985. □

## Why Examination Reforms

**A Report of Activities and Recommendations at the end of one-day symposium on "Why Examination Reforms?" held on March 11, 1984 at Amravati University**

A one-day symposium on 'Why Examination Reforms' got off to an excellent start day an inspiring address from Dr Thakare, Vice-Chancellor, Panjabrao Krishi Vidyapeeth, Akola. In his address, he narrated the historical development of introduction of trimester system in agricultural Universities with a view to integrate teaching, learning and evaluation. He however, cautioned the universities other than agricultural, not to commit the mistakes that followed a rather hasty introduction of all reforms at one stroke. He reiterated that several preparatory measures are to be undertaken before successful implementation of reforms, changes and innovations. He underscored the importance of training of teachers. Prof Natarajan in his keynote address outlined the need for considering basic issues in examination reform, namely,

frequency and language examinations, structure and pattern of question papers choice of questions, paper-setting and types of questions, evaluation of scripts and moderation of results. He mentioned the success and failure stories of several universities and drew their attention to the factors involved in a clear understanding of basic concepts of reforms, mode and modalities of reforms procedures of reforms with adequate preparation of teachers, students, decision makers and administrators. Such academic issues like introduction of question banking, introduction of grading in place of marking and introduction of scientific procedures for moderation and grading have all been dealt with in detail. Certain recommendations are given below which were accepted by the group consisting of distinguished members of

Executive Council, Academic Council, Boards of Studies and Principals of affiliated colleges. A plan of action is also indicated in this report which will enable the university to put in action these recommendations. These are-

- I A revision of syllabu to include
- (a) Content outlined in great detail to indicate breadth and depth of topics sequence, etc,
- (b) a list of abilities/skills to be developed in students,
- (c) a list of teaching techniques to be adopted with teachers activities/student activities,
- (d) a list of aids to teaching/learning,
- (e) evaluation procedures and
- (f) is time scheduling to be undertaken immediately?

2. It was unanimously endorsed that there should be only one annual examination
3. The most important recommendation is to get the syllabus revised to take care of the aspect of spelling out of instructional objectives
4. It is recommended that a chart of combining outlines of content/abilities should be prepared for each question paper
5. It is therefore, suggested that the Boards of Studies meetings may take a decision on the pattern of the question paper. It should be said here that there was a unanimous consensus amongst all groups that the restructured question paper for all subjects should consist of
  - (i) Part A—Objective type 20-40 items, 20-40 mts, 20-40 marks
  - (ii) Part B - Short answer, 10-15 questions, 40-60 mts, 20-50 marks
  - (iii) Part C - Long answer, 1-3 questions, 20-60 mts, 15-40 marks

The actual decision regarding Part A, Part B and Part C will have to be made by different Boards of Studies
6. While total elimination of options should be the ultimate goal, it may not be wise to go that far immediately.
7. There was a unanimous recommendation that Grading should be bilingual, namely, Marathi and English.
8. Those who set question papers and those who mark the answer books must be thoroughly familiar with the subject as it is taught in the colleges. That recent teaching experience at the level of the particular paper is an essential qualification

A group of 2 to 3 teachers will set the paper.

Any paper setter or teacher who writes an examination question, should provide also a model answer

Centralised evaluation is recommended.

9. All the groups were unanimously of the opinion that question banking must be introduced
10. All the groups unanimously recommended to have the internal assessment at the post-graduate level, to start with.
11. It is recommended that at the Post-graduate level a system of direct grading be adopted. It is suggested that the University prepares and publishes a booklet, to be distributed to all teachers in the Colleges, giving them essential information on the intended changes in examination. Probably, it will be desirable also to organise training programmes for teachers who have not attended Workshops. One means of speeding the procedures may be to make more use of mechanical equipment like computers

#### Plan of Action

1. A joint meeting of Boards of Studies and Academic Council must be organised to consider the Report and accept proposals contained therein. Board of Studies should be asked to restructure their syllabus, restructure the pattern of Question Papers, prepare blueprints
2. Preliminary meeting of Principals to discuss the mechanics of Examination Reforms Programme
3. Meeting of Principals of Colleges and Heads of Departments to discuss with a consultant the problems relating to Examination Reform

4. Orientation Seminars for teachers and students at least 5 or 6 centres

5. Primary Workshops at the University for selected teachers representing all the disciplines in areas like
  - (a) Internal assessment
  - (b) Question Banking
  - (c) Grading

6. Seminar of leaders chosen 9 out of Primary Workshop participants to serve as group leaders at Secondary Workshop

7. Secondary Workshop for a large number of teachers at different regional centres making use of leaders

8. Meeting of leaders to finalise recommendations

9. Meeting of student representatives

A series of Workshops to train teachers in implementing

- (a) Internal Assessment
- (b) Question Banking
- (c) Grading

in the Kanpur University

It is recommended that Examination Reform Unit and a post of Controller of Examinations be created with the following functions

#### Examination Reform Unit (Academic Preconduct/Post Conduct)

1. Form and content of Question paper
2. Paper setting
3. Evaluation of scripts  
Analysis of examination papers, marks (statistical)  
Training of Teachers/Paper-setters/Examiners

#### Controller of Examinations (Administrative Conduct/Post-Conduct)

Printing paper, Storage, (Secrecy), Announcement of results ☐



# Decision-Making and University Management

D. R. Darji\*

D. K. Sharma\*\*

Decision-making is very important aspect of the management of education systems. Management of the decision-making process is management of the structure and functioning of decision groups so that these decision-making processes become congruent with changes in the nature of the decision-making task undertaken at a particular point of time within the system. A decision-making design is therefore, a very complex problem. The decision process requires that a single strategy must be chosen from a number of alternatives which may begin to structure our thinking process. All relevant elements must be a part of the decision process. So it is desired to determine a decision-making method that will be acceptable to all the parties participating in the decision process. It is one of the most important areas for research specially for education systems. In India, very few researches have been done in the area of decision-making concerning the higher education system. Abroad there are researches in decision-making in relation to (i) collective bargaining (ii) decisional participation, (iii) power and influence of decision-making, (iv) models of decision-making, (v) use of computers and simulation (vi) miscellaneous researches. Here brief review of these researches has been given for the researchers and practitioners working in different types of education systems.

## Collective Bargaining

At present the traditional faculty mechanisms for decision-making are as widely practised as they were before collective bargaining came to the campus. Gains in faculty influence in decision-making are not restricted to a few but are spread among a range of faculty members. The experience of faculty unions thus far does not show that collective bargaining produces such changes in the working conditions of faculty as to make them no longer professional (Jimenez, 1980). Researches done by Thorpe (1975), Ramsay (1979), Hutto (1980), Dunbar (1976) support the favourable attitude of faculty towards collective bargaining. McFadden (1977) examined the perceived effects of collective bargaining on the distribution of power within community college decision-making. Findings of this study suggested that collective bargaining would significantly alter the balance of power within community college decision-making arenas. The contention that collective bargaining would foster the existence and the willingness to share control in decision-making was supported by the data in this

study. In some cases locus of decision-making for faculty work-load had shifted from strong administrative domination toward co-equal involvement. Faculty experience with collective bargaining has apparently been instrumental in stimulating sharply increased concern for even more participation in institutional governance (Hudson, 1974). Few researches have been done on the impact of collective bargaining in higher education systems. Bernier (1974), McDonald (1976), Napolitano (1978), Tumminia (1979), Bidwell (1980) have found that collective bargaining has got significant effect on the management of colleges.

Depaoli (1974) determined the difference between working conditions for community college instructors operating with a traditional contract. There was no significant difference between the minimum mean salaries for the two types of colleges. Collective bargaining colleges and traditional colleges demonstrated no significant differences for the following: (a) instructor's working conditions, (b) leave provisions, (c) general contract provisions, (d) promotion regulation. There may be difference of views about collective bargaining between faculty and administrators. The results of the study done by Michaels (1980) indicated that faculty attitudes towards both bargaining and governance issues differ markedly from the attitudes of administrators and trustees.

## Decisional Participation

The individuals differ widely in the importance they assign to their own membership and to the organization itself. More is clearly related to the possibility of increasing participation as a way of developing personal commitment to the organization. Phillips (1974) determined the differences that exist between the actual and desired levels of participation perceived by community college middle management personnel with respect to selected personnel management functions. A highly significant difference was found between the middle managers' perception of their actual and desired levels of participation. In some of the researches, there was specific differences in views expressed pertaining to the existing degree of participation in the decision making among faculty members (Renegar, 1975, Hesseflow, 1975). Research work was also done to examine the relationship between decisional participation and job satisfaction of deans of education (Hauser, 1979). The deans of education were found to be very satisfied with their job. Shelton (1974) identified the perceived faculty administrative governance relationships from clarification of perceived policy relations in the areas of administrative leader-

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ship, decision making, faculty control, and professionalism. Statistical difference supported the contention of faculty and administrator. Administrators were more satisfied with existing policy arrangements in all but a few of the governance issues. Nehr (1975) viewed university governance as a set of political processes, and focusses on entrance of faculty into the committee structure of the University of Minnesota Senate as one of those processes. Akinola (1978) found inadequate involvement of faculty members in all areas of governance decisions. University Senate dealt with major governance decisions in Academic programmes through its various committees. Khalaf (1980) analyzed faculty perceptions of the performance of current institutional governing boards in academic affairs, and the alternative patterns of Faculty participation in governance in Texas Senior Colleges and Universities. It was concluded that respondents have negative perceptions about their boards. Boards faculty relations are expected to deteriorate, and faculty tension to increase, if faculty are not allowed to share in the authority for academic affairs. Dense (1977) identified the difference in perceived extent of bureaucracy between Faculty of unionized and non-unionized institutions of higher education. There was no significant difference between the two groups with respect to perceived extent of bureaucracy. Faculty of non-unionized institutions were significantly more satisfied with their participation in decision-making than faculty of unionized institutions. A highly significant negative correlation was found to exist between perceived extent of bureaucracy and extent of satisfaction with participation in decision-making. Darji and Sharma (1979) identified different decisional situations for a education system and collected the perceptions of the faculty members about their existing and would be participation in future.

#### **Power and Influence on Decision-Making**

Rugen (1977) examined and compared the relative amounts of latent power possessed by faculty associations and administrative officers as perceived by faculty members at community colleges in New York State. The faculty association in one institution was perceived to possess the largest amounts of latent power. In other institutions, faculty association possessed a small amount of latent power because they have been unable to gain power through the collective bargaining process, or because faculties have used other means to gain power such as the faculty senate.

Stonewater (1978) conducted a study of perceptions of power and influence in university decision-making. The comparison between faculty and administrators revealed that on several key issues, administrator perceived faculty as having more influence than faculty themselves perceived. Regarding preferred versus perceived influence, there was more difference between the two for faculty than for administrators on virtually all comparisons.

Dykes (1978) examined the factors which influence faculty participation in a complex organiza-

tion innovation at the University of Wisconsin. It was found that environmental uncertainty and organizational pressure for change as measured by performance served as a primary motivating force for participation. Lyons and Achilles (1976) studied the influence of mood of educational administrators on professional decisions. Results of this study suggest that practising and certified educational administrators were able to view educational tasks professionally and to exclude from their decisions personal "moods to arrive at professional" decision.

Admire (1978) analysed the role of community college division chairman in administrative decision making. It was found that administrative decision making role of chairman was changing as evidenced by more administrative descript titles, more time devoted to administrative duties, collective bargaining and the influence of larger divisional unity. Decision-making was most evident in the budgeting and staffing with limited involvement in planning. Decision-making was affected by such factors as size of college and decisional autonomy.

Erickson (1980) determined the effect of power held by academic departments on decision-making process. The relationship of decision-making process to total departmental power, total faculty power to total student power, and to the distribution of power were examined. Some significant relationships were found.

Floyd (1980) determined the relative importance of selected influences (politics, legal limitations, enrolment factors, economic measures, and administrative values) on the decision-making of departmental/division heads. Legal limitations were perceived as most important in the area of personnel (faculty/staff) services, second in importance in the area of student personnel services, third in importance in the area of administrative and managerial functions and least important in the area of curriculum and instruction.

#### **Models of Decision-Making**

Houghten and Gear (1976) examined the revolutionary concept of recurrent education in detail and developed a mathematical programming model. Parks, Siemens and Nicolai (1976) developed a model using cause representation of a decision-making task with a fixed number of alternatives. This model requires only the specifications of relevant input stimuli and a sample of stimuli-response relationship in order to develop a representation of the task. Mintzberg, Raisinghani and Theoret (1976) proposed a general model to describe interrelationships among 12 elements (3 central phases, 3 sets of supporting routines, and six sets of dynamic factors).

Richard, Taylor and Thomson (1976) developed a five staged model for decision-making which incorporated a faculty opinion survey permitted almost universal expressions of opinion and preference on a complex administrative decision. Perlson (1977) worked for increasing the utilization of systems-



based decision-making by college and university administrators. Case studies were suggested to furnish the raw material for the application of the system-based model to problem situation requiring administrative decision-making. Connell (1977) sought to articulate a specific frame of reference with respect to normative social systems by integrating the concepts of decision-making and change in a way that present a dynamic model for leadership in an educational setting.

Cooper (1977) suggested resource management model which is a single period linear goal programming model. It was proposed that in order to improve performance by the implementation of multi-period models, the systems approach should be used to study the decision process. Chapman (1979) applied Graham Allison's Governmental (Bureaucratic) Political Model of organizational decision-making. This model would be useful for persons at any level of an educational hierarchy for viewing the politics of discovery, the politics of the issues and the politics of choice associated with decision. Dufty and Williams (1979) tested the contingency model of managerial leadership on the basis of decision-making procedures and managerial styles of department head in an academic institution as compared with those reported in other studies of managers in private enterprises and public bureaucracies.

#### Use of Computers and Simulation

Ferguson (1969) developed and conducted experiment with a time-sharing computer model. By modelling the dynamics of a job shop, the authors were able to both, make use of and evaluate academic research in job shop scheduling. The authors have devised a specific appointment of the problem environment which permits uses of their information system to explore the effects of various combinations of heuristics and programmed decision rules. The response of over 300 managers and academicians who have participated in the experiment, provides evidence of the practicality of such an approach to multi-dimensional time variant problem solving.

Inbar (1976) analyzed the research and theory on simulations of bureaucratic decisions and the information processing limitations of human decision makers. Several traditional criticisms of simulation efforts in bureaucratic decision-making have been discussed. Hart and Sung (1976) used computer simulation of triad decision making which examined four system variables that may affect the group members' satisfaction with the group decision and the groups difficulty in reaching the decision. The variables were (1) the decision rule used, (2) the relative similarity of the individual members initial preferences position to the group decision, (3) the initial concordance of the group members preferences, (4) the group members preference strength. Ego involvement from Sherif's social judgement theory of attitudes, was

found to be a plausible process through which individual preferences can influence group decision. The results of the computer simulation were compared to the results from an experimental simulation of triad decision-making obtained by Sung and Castore. Differences and similarities in the two results and their implications for understanding group decision-making were discussed and explained.

Hoban (1978) identified the decision-making styles of student personnel administrators in higher education through use of an inbasket simulation. These decision-making styles as indicated by the result of this study, revealed three major indicators of behaviour. First, as a group, those student personnel administrators tended to concentrate their decision-making power within the dean of students office without much staff consultation. Second the subjects in this sample involved themselves little with other members of the college community. Third, they displayed very few instances of informalities when dealing with their staff.

#### Miscellaneous Researches in Decision Making

Johnson (1973) identified the decision-making characteristics of administrators in predominantly black institution of higher education. The Presidents, Academic Deans and Department Chairmen viewed in many ways the role and functions of their office. The majority of the responses given by the respondent was in area of involving more people in decision-making process. The Department Chairmen and Deans stressed planning and co-ordinating the programmes of the departments. The President placed more emphasis in the area pertaining to the finances of college.

Anderson (1974) identified and described methods of measuring value within the normative framework of decision theory and to discuss the feasibility of potential application to higher education. It was concluded that decision-making process in higher education would necessarily require probability judgements and value assessments. A value decision approach would not replace subjective judgement and experiences nor do quantitative decision rule replace the human decision maker.

Sharpley (1975) attempted to give caution against the indiscriminate use of economic analysis by examining some of its conceptual limitations, the usefulness of the techniques and the implications it has for particular aspects of an organization. Economic analysis should be applied but it may consider other values which would be pursuing long term efficiency.

Pederson (1975) examined the matter illustrating the desirability of greater involvement in the making of educational decisions, the decentralization of curriculum development, the collegial approach to making decisions and the professional development needs of teachers and administrators. It suggested more careful planning, decentralization and greater

involvement in educational decision-making, pre-service and in-service of involved personnel and adequate time and resources should be presented and co-ordinated for rational decision-making

Boehm (1976) suggested the judgement of the executive or of the computer point out should not dominate in the decision-making process of the organization. He advocated for the combination of the two on the basis of principles of systems analysis based on nine principal methods of systems analysis, two econometric models and system dynamics. In order to develop new methods for improving decision-making and information systems it is necessary to understand how these systems currently operate. Carl (1976) reported some aspects of current administrative systems. Khoddami (1977) studied the student involvement in decision-making process. Results showed that students were not able to undertake activities related to their needs and interests. There was lack of opportunities for student participation in the governance of the college where students can make valuable contribution. Most significant finding was that neither students, faculty, nor administrators were satisfied with the current situation. Srivastava (1977) found that most of the teacher and student respondents as a group could not entertain any reason against permitting teachers to participate in the administrative decision-making and functioning of their Institution.

Lynch (1978) conducted a study to improve decisions made by administrators. The purpose of the study was to determine, by experimentation, whether the anxiety level of the subjects who practised transcendental meditation could be reduced to a significant degree so that they could make better decisions under an externally imposed stress condition. The experimental group was taught transcendental meditation and practised the technique for two months. It was found that transcendental meditation was beneficial in helping the subjects to reduce their level of anxiety, enabling them to make better decisions.

Chapman (1978) conducted an empirical study of college choice decision making behaviour. The study results suggested that the two most important factors in the college choice process were college quality and financial aid. Apparently, students were quite rational in their college choice behaviour.

In a study Matthal, Pareek and Rao (1978) found out that the higher the dissatisfaction due to under participation, the less the organizational health of the education system. Darji and Sharma (1980) collected the opinions of faculty members of a University to study the students and non-teaching staff participation in Governance.

Beasley (1980) assessed perceived outcomes of participants in the faculty development programme in historically black public colleges and universities during academic years from 1968 to through

1973. It was concluded that faculty development was beneficial to both participants and institutions; that, in the main, participants achieved important outcomes. The extent of agreement between participants and co-ordinators with regard to those items of inquiry support these conclusions.

### Future Researches

Viewing the researches done in decision-making it could be concluded that it requires more and more research attempts to provide better solutions for our education systems which will be creating significant impact on the management and in due course of time accountability aspect will be justified. Following are some of the suggested areas for future researches in this aspect.

- 1 Perceptions of faculty members about student participation and non-teaching staff participation in decision-Making
- 2 Laymen's participation in University Governance—attitude of faculty and administrators
- 3 Development of participative models in decision-making
- 4 Use of computers in different type of decision situations in various types of education systems
- 5 Application of mathematical model of decision-making
- 6 Effect of decisional satisfaction on different factors like, job satisfaction, organizational health, conflict management, teachers' morale
7. Identification of different decision situations and deciding level of participation for various education systems
- 8 Possibility of collective bargaining in policy decision
- 9 Decision analysis of various decision-making bodies for certain period and their impact on organizational effectiveness
- 10 Problems faced by the administrators in different decision situations
- 11 Bureaucratic set up and its impact on decision-making
- 12 Impact of pressure groups on different decisions in some education systems
- 13 Development of proper simulation exercises for developing decision-making ability
- 14 Impact of policy decision on routine decision-making
15. Psychological and sociological factors related to decision-making like personality, intelligence, creativity, group dynamics, social set up, social change, etc

[Note A bibliography of references submitted by the authors is not printed]

# **Shri Venkatraman Addresses Convocation of Anna University**

**Excerpts from the Convocation Address delivered  
by Thiru R Venkatraman, Union Minister for  
Defence, at the Anna University, Madras on 26th  
February, 1984**

“ We are living in an exciting period in the history of mankind and in the history of our own country. Science and technology have made phenomenal progress in our times. For the first time in the world history, we have the great opportunity to eradicate misery and poverty through the application of science and technology and to establish a universal brotherhood in which prosperity is equitably shared by one and all. In our own country, we are passing through a phase of rapid transformation

met only through the application of science and technology in various facets of our economic life. He laid the foundation of many of the great institutions, the national Scientific Laboratories and gigantic Power and Steel projects of which we are very proud today and provided continuous support and encouragement to an unprecedented expansion of educational and research activities. The large infrastructure which has been created and nurtured during the post-independence period has now bestowed a unique position

## **Convocation**

from a traditional to a modern and vibrant society, within the framework of a democratic and secular political system. To all of us, and more particular to the younger generation, has been given the unique opportunity of participating in this great adventure.

“The success in taking a leap forward in the march towards an egalitarian and prosperous society, which was the fond dream of those who struggled valiantly for the independence of this country, will turn largely on the pace of advancement in the field of science and technology. It is to the eternal credit and foresight of Pandit Jawaharlal Nehru, more than anyone else, that he realised the tremendous contribution which science and technology could make to the socio-economic transformation of our country. He was steadfast in his belief that the problems of poverty and unemployment could be

to this country as having the third largest complement of scientific and technical personnel in the world. Above all, Nehru considered that the pursuit of science will help to engender the scientific temper—an attitude of mind which eschews dogmas and rituals and imparts the ability to reason out and to instil a spirit of enquiry. In his way of thinking, science and technology was, therefore, not merely an instrument of economic advancement but was a powerful tool for bringing about social changes.

“During the last thirty years or so, we have made considerable economic progress and have also created a large infrastructure in science and technology. Great as these achievements are, the time is opportune to take stock of the current situation, to analyse the national and international environment and to give a new direction to our future effort.

“The benefits already achieved through the application of science and technology in agriculture and industry are substantial. The outstanding work carried out in the agricultural universities has significantly contributed to the Green Revolution and the attainment of self-sufficiency in food. In many other agricultural commodities like cotton and jute, the progress, by any standards, is remarkable. I am confident that the continuing research in pulses and oilseeds will soon enable us to break the stagnation in these two essential commodities too. In the industrial sector, we have now a diversified industrial structure which spans a whole range of consumer, producer and capital-goods industries. The tremendous strides made in industrial development is exemplified by the changes in the pattern of our international trade. Unlike in the early days, imports are now primarily limited to basic raw materials like non-ferrous metals, sulphur etc. Manufactured products form only a small proportion of the import bill. At the other end, exports now consist substantially of manufactured products of various kinds including a variety of machinery and engineering goods.

“Apart from the substantial increase in the range of industrial products, this period has also witnessed the development of technological capabilities and competence of a high order. Highly sophisticated technologies, though initially imported, have now been absorbed and often adapted to meet the local needs. There are also some outstanding examples of productionisation of technologies developed within the country. In other fields of activities like medicine, the progress has been exceedingly satisfactory as is evident from the significant increase in the average expectation of life and the eradication of some of the virulent diseases like smallpox.

“A similar effort in competence building within the defence sector has produced equally rewarding results. There has been

a considerable step up in the range and quantum of output from defence establishments and associated undertakings in meeting the sophisticated requirements of the defence forces. More importantly, the Defence Research and Development Organisation (DRDO) has to its credit, considerable success in the development of advance technologies which should go a long way in achieving a greater degree of self-reliance.

"It will, however, be unwise on our part to ignore some of the weaknesses that have crept in. While the record of domestic industry in general has been good in the absorption and adaptation of imported technology, there has been little effort, barring some honourable exceptions, to upgrade technology to remain contemporary with international developments. The result has been a creeping obsolescence over a wide range of the industrial spectrum, leading to the emergence of a high cost economy. Productivity, on the whole, remains low and consequently, domestic industry is unable, in most cases, to face international competition. It has not been possible to build up appropriate institutional mechanism to provide the necessary linkage between universities, scientific and technological institutions and the industry. While a large infrastructure has been created, for scientific and technological research, the results of the painstaking work in our universities and laboratories remain largely dormant without finding application in the production of goods or services. As a consequence, there has been a continuing dependence on imported technology, including repetitive imports even by industrial units which had the advantage of imported technology for many years. This phenomenon has also led to a sense of dissatisfaction among our research scientists and technologists who feel frustrated that the results of research are not accepted and utilised by industry. Industry has done little by way of promoting in-house research and development

activities. Above all, universities are virtually kept out of the stream of the main socio-economic activities of the nation.

"These unsatisfactory trends need to be arrested. The size and traditions of our nation demand of us to be highly self-reliant to maintain our independence and to ensure a more rapid economic advancement. We have always upheld self-reliance as one of our premier objectives. Excessive reliance on external resources, whether financial or technological, will be inconsistent with this cardinal objective. The recent international developments only highlight the need and impart a greater sense of urgency to achieving self-reliance as early as possible. The liberal approach which informed international relations in the past and contributed to a significant flow of finance and technology to the developing countries has unhappily undergone a marked shift in favour of protectionism and dwindling transfer of resources to the developing countries. The quantum of multi-lateral and bilateral assistance has steadily diminished in real terms in recent years. Many restrictions have now been placed on the flow of technology. To worsen the situation further the global security environment has also visible and steadily deteriorated.

"It is in this background that we have to give a new orientation to our scientific and technological effort. Both in the matter of economic development and defence, it is only through the application of science and technology that we can find solutions to the problems that beset us. Notwithstanding the fact that savings in the economy are well over 20 per cent, comparable to those in the developed countries, the rate of economic progress is still substantially below the needs and aspirations of our population. The significant increase in the capital output ratio over time is, among other things, indicative of poor productivity and efficiency in the economic system. One of the contributory factors

to this unfortunate situation is the lack of technological progress in the major sectors of our economy. While in the short term, technology can be imported, to the extent it is still available without restrictions, we will never be able to catch up with the rapid advances elsewhere in the world unless we are in the forefront of technology generation. Apart from the fact that the latest technology is often not available for transfer, imported technology may not often be the most appropriate one in relation to our factor endowments. Capital intensive technologies, for example, will be irrelevant to a country like ours in which capital is scarce and labour is abundant. Even when technology is imported, it is necessary that it is carefully scrutinised from the point of view of its relevance to domestic conditions. In most cases, it may need to be adapted to meet local needs. In other cases, there may be no option but to develop the technology within the country, as for instance, for the utilisation of some of the unique natural resources, which we possess. As these are of no importance to other countries, technology for their utilisation obviously cannot be expected to be developed by them. It follows that both the national imperatives and international outlook point to the need to become technologically self-reliant at least in some of the crucial sectors of our economy.

"When it comes to defence, the imperatives of becoming self-reliant are more critical. Mere acquisition of sophisticated weaponry from abroad does not bestow the required strength and security to our country. As in the civilian sector and more so in the defence sector, the latest technology will not be parted with by the owner, and therefore, as long as we depend on external sources, our competence will continue to remain second rate. The reason for this emphasis on indigenous development is not only an economy one. It is not merely that a developing nation can ill afford



to pay the price in foreign currency. The more fundamental reason is that within the realities of international politics, there is no other way of assuring for ourselves the uninterrupted availability of critical items like guns, tanks, radars, torpedoes, missiles and aircraft in times of real need—except through indigenous design, development and manufacture. Besides, there is a grave risk of the country being deprived of essential spares and replacements during periods of crisis.

“These considerations are reflected in the Technology Policy Statement announced by the Prime Minister in January 1983. The central theme of this Statement is technological self-reliance. As pointed out in that Statement it is not that we intend to deny ourselves the benefits of imported technology, but each time import of technology is resorted to, it will be judged in the context of national interest. It is necessary to lay down clear yardsticks to assess the nature and relevance of the imported technology and the terms on which it is imported to satisfy the criterion of national interest. It should certainly not hurt the domestic effort in building technological competence which, as mentioned, is the primary aim of the Technology Policy.

“Fortunately, we are endowed with an adequate measure of outstanding talent which can take us rapidly towards the objective of achieving self-reliance in critical areas of technology. The scientists and technologists working in our national laboratories, defence research institutions, universities and in industry are of a calibre which compares very favourably with international standards. We have also some very eminent scientists and technologists working outside the country, whose services can be availed of in the national interest. The basic requirement of intellect and talent for attaining self-reliance, therefore, exists. All that is required is to provide clearcut objectives and the or-

ganisational support for the teamwork to produce technological breakthrough in carefully chosen areas of national importance. Our scientists and technologists have exhibited their capacity to produce outstanding results. The brilliant achievements in the field of atomic energy, space and oceanography are striking examples of what Indian scientists and technologists can do. India can realistically expect to become one among the technologically advanced nations within the next decade or so. It is to this end that we should now bend our energies in the current stage of our economic development.

“We are on the verge of breaking into a new range of high technologies with immense potential for the benefit of humanity. The beginnings of this new technological revolution have already been with us, but it is difficult yet to fathom the full scope and range of these technologies. There have been rapid advances in the field of electronics—a relatively new technology—with the prospect of further revolutionary changes. There is no aspect of life which is not today touched by electronics. The virtual explosion in the field of communications would hardly have been possible but for the advent of electronics. It is needless to emphasise the crucial role played by electronics in the field of defence. It is contributing to an unprecedented transformation in the whole range of manufacturing practices and technology, ranging from design, production, control, testing to quality assurance. The entry of robots has imparted a new element of great significance with wide social and economic consequences. Information techno-

logy supported by electronics is now registering an unprecedented growth. Whether it be production or entertainment, communication or information, defence or medicine, electronics has left its indelible mark on them. Similarly, genetics and bio-technology will herald many developments of immense consequence in agriculture, medicine and industry. The technological developments in harnessing new sources of energy will soon provide a greater sense of assurance against the depleting traditional resources of energy. Laser technology is another area with great potential in a variety of fields including industry and medicine. The advances in oceanography and particularly in the exploitation of marine non-biological resources also stand out as one of the new technologies of great economic and strategic significance. It is important that we are aware of these remarkable advances and keep ourselves in the vanguard of these technologies through our own efforts.

“The world is currently going through a second technological revolution. While the earlier industrial revolution helped substitute physical power by mechanical power, the current electronic revolution seeks to substitute brain power by electronic memories and computer applications. India missed the industrial revolution since, we were not in control of our destinies at that time but we can neither afford nor have any excuse to miss the Electronic Revolution, that is overtaking the world today. Posterity will not forgive us if our scientists and technologists do not participate in this great adventure and carve out for India an honourable place in this technological explosion.” □



# New Study Centres at Madras University

The Institute of Correspondence Education of the Madras University on 19th January 1984 launched upon their two programmes (i) Inauguration of Students' Study Centres' and (ii) Inauguration of New Post-graduate Courses in M.A. Public Administration, Political Science and M.Sc., Chemistry and Zoology. Dr John S. Daniel, President of the International Council for Distance Education and Vice-Rector (Academic), Concordia University, Canada, inaugurated the programmes and delivered the key-note address. Dr P.M. Annamalai, Director of the Institute outlined the various measures taken to maintain parity of standards between the correspondence and regular courses so as to dispel any misgivings about the credibility of the correspondence courses.

While delivering the Presidential address Dr M. Santappa, Vice-Chancellor of the University stated that this Institute was started only to meet the growing demands for higher education. This nascent Institute did have its teething problems, said Dr Santappa and requested the President of the International Council for Distance Education to help the Institute to develop the necessary infrastructural facilities especially the effective use of media in Distance learning or the educational technology for this non-formal system of education. Further the Vice-Chancellor pointed out the necessity to strengthen the link between the University Departments and the Institute and the need to wipe-out the stigma attached to the degrees awarded by the Correspondence Institutes. Dr Santappa expressed the hope that the three study centres in the city of Madras, the World University Service Centre, the A.C. College and the Pachaiappas College established for the students of the I.C.E. would be forerunners for more such centres enabling the students to avail themselves of the facilities offered there.

Dr John Daniel's key-note address highlighted the global

perspectives of Distance Education. According to him the dimensions of this dynamic system are so great that it is poised for a take-off all over the world, 50 countries have 80 affiliated units of Distance education, the Central China Television University in Beijing with an enrolment of 750,000 being the largest among them, the next in the order is the Open University of Thailand with 200,000 students, followed by Korea with 120,000 students; in all about 10 million students are studying in this system all over the world.

Dr Daniel revealed another interesting aspect of this system. He narrated the experience of Australia, England and Thailand which conducted a survey, the result of which established the fact that 'off campus' students fared better than their counterparts 'on-campus'. He further commented that a short coming of Correspondence Education in India was that it concentrated mainly on arts, social sciences and commerce whereas elsewhere in the world even the disciplines in science and technology were taught through this system. He added that a two-way communication system should be evolved in order to impart education through courses on Science and Technology. Dr Daniel mentioned that a network for the 'Pacific Region' was being created in Malaysia for the study of the above subjects.

Dr Daniel advocated the development of independent open-universities on the model of the British Open University as he feared that under the conventional set-up a colonial-status would be given to the Correspondence Institutes.

Dr Daniel further said that the primary requisite for the success of distance-learning was an effective two-way communication system to ensure the necessary feed-back thus making the students feel a part of a system. He said that an international data Bank is being established with the help of the United Nations

University to provide computerised information on all distance education courses throughout the world.

On the Study Centre programme now launched upon by the I.C.E., Dr Daniel said that this fulfilled the needs of the major participants in the system of Distance learning. This promoted interaction not only with the Faculties but also amongst the students themselves, thus eliminating the loneliness attributed to the students in this system.

## Seminar on Business Management and Punjabi

The protective capital licensing policy was retarding national pursuits in manufacture of indigenous automobiles in our country, remarked Dr S.S. Johl, Vice-Chancellor, Punjabi University at a seminar on "Business Management and Punjabi" organized by the Department of Business Management in collaboration with the Department of Planning & Development at the University recently.

The Vice-Chancellor stressed to promote research and professional scientific cult for improving the level of efficiency in the agricultural and industrial sectors.

Dr Johl urged the Department of Business Management at the University to render common consultancy service to the small scale industries. As a result of interaction this will provide the business management students with worthwhile data for research.

Earlier, commending the strong fabric in the society which were helpful in repulsing the persisting attacks upon it, the Vice-Chancellor, appealed to the scholars to contribute their lot in rejuvenating the society to face present day challenges from irresponsible quarters.

Mr Amarjit Singh Dhillon, Director, Planning and Development, pleaded the teachers to use Punjabi for transferring knowledge to the students.

Prof P.K. Kapoor, Head of the Department of Business Management, Punjabi University,

in his welcome address reminded the delegates of the statutory obligations of the University for the development of the Punjabi language.

### **250 technical terms coined in Hindi**

Nearly 250 technical terms were coined after detailed discussions held during the four-day seminar on coordination of scientific and technical terminology in Hindi which concluded at the Gorakhpur University on February 4, 1984

About 20 experts of various disciplines from Gorakhpur University and outside participated in the seminar which was sponsored by the Commission on Scientific and Technical Terms (CSTT)

About 3000 terms pertaining to different disciplines have so far been coordinated through seminars and meetings held in different Universities

The CSTT has been reconstituted under the chairmanship of Dr Malik Mohammad. It will now function as an apex body in the field of scientific and technical terminology

The Commission will, in future, sponsor and extend financial aid to the extent possible for the evolution of terminology and preparations of technical dictionaries in languages other than Hindi

The task of preparation and evolution of scientific and technical terminology in Hindi was initially taken up by the Ministry of Education and the equivalents were finalized by different committees of experts in various fields of science and technology

Later, in pursuance of the Presidential Order of April 1960, the Ministry of Education appointed a Standing Committee for Scientific and Technical Terminology to review the work done and also to evolve advanced terminology in various disciplines

The Commission for Scientific and Technical Terminology has so far published Hindi equivalents of about four lakh scientific

and technical terms pertaining to almost all the disciplines like medicine, engineering, agriculture, social sciences and humanities in the form of various consolidated glossaries

The terminology evolved by the Commission has been in wide use by the University teachers, writers and students

However, after having been in usage for more than a decade it is now being felt that a number of terms published by the Commission require inter-disciplinary coordination in order to reduce as far as possible the multiplicity of equivalents of the same or similar concepts

Besides, the Commission has launched a project of identifying and evolving pan-Indian words for basic scientific and technical terms with a view to preparing as far as possible a uniform scientific terminology for all modern Indian Languages

### **International women's day at BITS**

Under the auspices of Community Welfare Unit, the 77th International Women's Day was celebrated at BITS, Pilani on 8 March, 1984. The function was presided over by a panel of five ladies, who have made a significant contribution to social welfare, cultural advancement and educational progress in and around Pilani. The highlight of the programme was the presentation of citations given to Mrs Kaushilya Devi Vyas and Kumari Vinita Sud. The former, a mother of three children, is a successful entrepreneur and the latter, an extremely talented student of Computer Science at BITS, is also successful actress and director of plays. The programme also included a talk on the role of women, world peace, national integrity, by Mrs Meera Banerji and recitation of poems, dances and songs. On behalf of the panel, Dr (Mrs) G Subhalakshmi, Principal, Mandelia Home Science College, Pilani congratulated the organisers for drawing attention towards the need for improvement in the status of women. She suggested that the

women enthusiasts could adopt a village or a locality and make a drive to eradicate malnutrition among children as a concrete step of their further involvement in social welfare and rural upliftment

### **Sarvodaya fortnight at GRI**

As part of the extension programme, the Gandhigram Rural Institute (Deemed University) has conducted a Sarvodaya Fortnight in its service villages. The programme is aimed at strengthening grass-root planning besides creating an awareness among the villagers to come forward to plan for themselves

The two-week programme in which M Phil students and the faculty members of the Institute actively participated, helped the Village Planning Committees to formulate the annual plans. The quadrangular conference comprising development officials, bank managers, members of the Village Planning Committees and the faculty members convened on 12th February, reviewed the last year's annual plans of the villages, recorded the problems and bottlenecks in their execution and formulated the annual plans for the villages for 1984-85. The meeting also suggested ways and means to solve the practical difficulties that crop up at grass-root level in planning and implementation

Presiding over the joint-meeting, Dr M Aram, Vice-Chancellor stressed the need for a systematic and scientific planning at the village level. Commending the example set by Kannimanuthu village in adopting family welfare programme effectively, he suggested that zero population growth and poverty, zero unemployment and zero illiteracy for all the service villages should be the aim. Prof R Subramanian welcomed the gathering and Shri N Markandan, Coordinator of Extension Activities introduced the draft annual plans

Repair of the roads, laying of new roads connecting small hamlets, digging up new ponds including desilting, free medical services were some of the items

of work to be taken up in the service villages with the active cooperation of the development officials. Draft annual plans of twenty one service villages were finalised at the joint meeting.

The Gandhigram Rural Institute has a service area of twenty six villages spread over four blocks of Madurai District. Adult Education, pre-school education, rural housing, health education, generating employment opportunities improving the living conditions of the weaker sections by providing subsidiary occupation are some of the on-going extension activities. A cluster of twenty one villages have been identified for intensive development. Besides Teaching and Research, Extension forms an integral part of all academic programmes offered at Gandhigram Rural Institute.

### **Course on computer aided design of mine ventilation systems**

An Executive Development Programme on 'Computer Aided Design of Mine Ventilation Systems' was organised at the Indian School of Mines, Dhanbad recently. The objective of the course was to cover the subject of computer applications in Mine Ventilation Planning and specially the subject of ventilation network analysis with the help of digital computer.

A total of 15 participants from seven organisations, namely, CEMPDIL, WCL, ECL, SCCL, TISCO, DGMS and CMRS attended the course. The faculty for the course also included, Prof. A. K. Sinha, Associated Professor of Mining Engineering, Southern Illinois University, Carbondale, USA and Shri P. V. Pawar, Manager (MS) of Projects and Developments (I) Ltd, Sindri.

Inaugurating the course, Prof. G. S. Marwaha, Director, Indian School of Mines mentioned the important role of mine ventilation in promoting mine safety and efficiency. He also mentioned that Indian School of Mines will soon be equipped with a

large modern computer of the 'VAX' type.

The course commenced with an over-view of the ventilation systems in USA and other countries. The procedure of ventilation planning, net-work analysis by manual as well as by computer method, case studies on computer application in ventilation planning along with the limitations in computer use and design of auxiliary ventilation systems were discussed in the course. A visit was made to the Computer Centre of Projects and Developments (I) Ltd at Sindri for carrying out exercises connected with the course topic.

The valedictory address of the course was given by Mr. Justice C. T. Dighey, Retired Judge of Bombay High Court and presently holding the Honorary Court of Inquiry at Dhanbad. In his address, Justice Dighey expressed the hope that by the use of modern tools like computers Indian engineers would be able to achieve success in the industrial field in the same way as the country had achieved success in the field of art and culture.

### **Punjabi University to introduce new courses**

The Punjabi University Syndicate, which met under the chairmanship of Vice-Chancellor, Dr. S. S. Jhola on February 25 approved to start the master courses in Journalism and Mass Communi-

cation and Psychology at the campus. It also decided to close the honours school courses, except Punjabi. The closure of Evening Institute of Postgraduate studies was also approved.

In one of its decisions, the Syndicate approved of ending the system of moderation in all classes. It also approved to award a 'detailed transcript', which will include the theory, practical and internal assessment marks attained by a candidate separately instead of a detailed marks certificate.

The Syndicate also approved to bifurcate the department of mathematics on the university campus into mathematics and statistics.

The Syndicate also approved more than 25 appointments and departmental promotions under the merit promotion scheme.

The Syndicate strongly condemned the incidents of killings and violence in Punjab and Haryana and observed a two-minute silence to mourn the death of those killed in the clashes. It appealed for exercising restraint by the people belonging to all communities and maintain communal harmony.

### **Calcutta University introduces M.A. in Russian**

From the next academic session in 1984, M.A. Course in Russian will be introduced by Calcutta University. Those who have

### **Shri N. Narotham Reddy Passes Away**

Osmania University Teachers at a condolence meeting paid rich tributes to Mr. N. Narotham Reddy, former Vice-Chancellor of the University who passed away on March 12. Prof. G. M. Reddy, Principal, Univ. College of Science, Prof. K. S. Upadhyay, Principal, Univ. College of Arts, recalled the long association of Mr. N. Narotham Reddy with the University and his positive contribution.

A large number of buildings were constructed during his tenure on the campus and at Warangal. He was also responsible for introducing the entrance examination at Osmania University. They described him as a thorough gentleman and able administrator.

In a condolence resolution, the University teachers recalled with gratitude his services to the University as a member of the University Syndicate and as the Vice-Chancellor. They conveyed their condolences to the members of the bereaved family.

The meeting was chaired by the Vice-Chancellor, Mr. Syed Hashim Ali.

passed the one-year Certificate Course in Russian, now being run by the University, will be eligible for admission to the new postgraduate degree class.

In terms of an agreement entered into between Puskin Institute of Moscow and the Calcutta University three nominees of the Institute from Moscow will be associated with the University as teachers in Russian language and literature. The agreement also provides for exchange of books, journals, other reading material and audio-visual equipment needed for the purpose. At a later stage, research scholars and teachers of the department of Calcutta University would be able to visit Soviet Union for higher studies.

### ATKT system being changed by Bombay Varsity

Students of Bombay University who fail in one or two papers will now be enabled to take the

supplementary examination within about a month of the declaration of results. This means they need not wait till October/November to clear the papers in which they failed in the April/May (Main) Examinations. This new system has been introduced this year by the University.

This system would be applicable to students of the First year of the Three-year Degree Course examination which will now be conducted by the colleges. Next year examinations for the Second year of the Three-year Degree Course will also be delegated to the colleges and the new pattern of supplementary examination will become available to the Second year students also.

The ATKT (Allowed to keep terms) system will be phased out in this manner.

### UGC team visits Gurukula University

On the 9th and 10th March 1984 a Development Team of UGC with Dr R R Mukherji, Vice-Chancellor, Burdwan University, as Chairman visited Gurukula Kangri University.

The committee had meetings with the teachers, students and non-teaching staff. It visited Punya Bhumi, the old site of Gurukula University and the Kanya Gurukula, Dehradun. It is to be noted that the Development team of UGC had come long back during the Fourth Plan period. It could not come during the Fifth Plan period as the conditions in the University were not stable.

The committee, it is reported, insisted that this University must maintain the glorious tradition of Gurukula and should strive to become the foremost centre of learning for Indological studies.

## CALENDAR OF EVENTS

Proposed Dates of the Event	Title of the Conference/Seminar/Symposium/Workshop	Objective	Name of the Organising Department	Name of the Organising Secretary/Officer to be contacted	Remarks
April 1-3, 1984	XVIII Annual Conference of the Indian Association for American Studies	—	To be held at Gurukula Kangri University, Haridwar	Mr S S Bhagat, Reader & Head of the Department of English, Gurukula Kangri University, Haridwar	—
May 23 to June 12, 1984	Workshop	Recent development in Statistics	Department of Statistics, Karnatak University, Dharwad	Dr B R Bhat, Head of the Department of Statistics	For College teachers
May 1-21, 1984	Refresher Course	Modern Scientific method teaching in Kannada for affiliated college teachers	Institute of Kannada Studies, Karnatak University, Dharwad	Dr M M Kalburgi, Head of the Department of Kannada	—
May/June, 1984	Refresher Course	Latest development in functional areas of commerce	Department of Commerce, Karnatak University, Dharwad	Dr K R. Mallikarjunappa, Head of the Department of Commerce	—

## News from Agril. Varsities

### HAU Kisan Mela

The two-day Annual Kisan Mela of Haryana Agricultural University (HAU) was organised recently. About 7,000 farmers from Haryana and its adjoining States visited the mela. On this occasion seeds of various crops and vegetables of more than Rs one lac were sold.

The main attraction of the Kisan Mela this year was the Gaurav variety of gram—a newly developed blight tolerant variety having a yield potential of 20 per cent higher than the existing varieties. The performance of the variety has been outstanding not only in the state but also at the national level. It evoked a wide popular response among the farmers, particularly due to its high degree of disease tolerance.

Another attraction of the mela was the release of new varieties of wheat WH-283 and WH-291. Wheat variety 283 has been found very promising under timely sown conditions against popular variety HD-2009 by a margin of 11% whereas WH-291 has also excelled in yield under late sown conditions against variety HD-1553 (Sonabika) by a margin of about 10%. Both these varieties have an attractive grain having a good chapatti quality and are highly resistant to the disease.

The farmers were taken on guided tours to different stalls by scientists where they showed much interest in raya RH-30 variety of mustard. The university has also taken lead in release of raya RH-30 promising short duration variety of mustard. This variety has been widely adopted by the farmers in the state. The farmers took keen interest in the stall where the sample of sugarcane variety COH-2 and COH-3 and COS-767 were shown to them.

In the agricultural practices stall farmers were shown the cross

sowing of wheat which has been found to be a sound practice especially under late sown conditions. It has been possible to raise a very good crop of mustard and gram by adopting dry land technology. In the afternoon of both days a question-answer session was organised in which farmers got solution of their agricultural problems.

According to Dr. D S Bhatti, Director of Extension Education, HAU, this year, for the first time the farmers were shown successful research work undertaken on farm forestry. The technology of raising fast growing species like safeda, poplar and subabool were shown to the farmers. He said that the research work on farm forestry is intended to meet the requirements of fuel supply to the rural people and the replacement of cowdung, small timber and fodder supply, protection of agricultural fields against high wind velocity and to generate additional source of income apart from climatic amelioration.

In the orchards fruit growers were shown the technology for obtaining profuse fruiting in ber crop.

An agro-industries exhibition was also arranged on this occasion. HAU literature worth Rs 7000/- were sold. A crop competition was organised on this occasion in which many farmers brought samples of their crops. A total of 30 farmers got prizes for excellent crops grown in their

fields. Mrs Indira Bisnoi, Member of Board of Management, HAU gave away prizes to the winner of farmers.

Earlier the mela was inaugurated by Shri L D Kataria, IAS, Vice-Chancellor, HAU. On this occasion a cultural programme was staged for the first time by AIR, Rohtak on the inaugural day.

### Ginned cotton seed for sowing

Dr M S Kairon, Head of the Department of Agronomy, Haryana Agricultural University (HAU), has suggested chemical delinting of Ginned Cotton seed before sowing. According to the technique 10 kg fuzzy cotton seed is put into a drum of acid delinting machine or large plastic tub and 1 litre of sulphuric acid (commercial grade) is added and stirred for 6 to 12 minutes (depending upon the quantity of fuzzy on seed) till fuzz on the seeds gets burnt. The seed is then washed 3-4 times with clean water and light seeds floating on the surface are removed. Only healthy heavy settled seeds in drum or plastic tub are used. The seeds are then washed with 2% lime water and again with clean water. The seed is then dried in sun for 4-6 hours.

There are many benefits of this technique as healthy and clean seed is obtained, immature, half rippened and diseased seed is removed, pink boll worm larva present in the seed is killed by acid burning, better germination is obtained, less seed rate per unit area is required.

## News from Abroad

### Battery acid used in fodder

Australian biochemists have found an inexpensive way of making straw more digestible for cattle, sheep and other animals by moistening it with car

battery acid

Professor Geoff Richards, of the James Cook University of North Queensland's Department of Chemistry and Biochemistry, said the treatment would have particular application in Asian



countries where the potential value of straw as fodder had long been recognised. Farmers on small holdings could look forward to significant savings, he said.

Small quantities of sulphuric acid were poured on to the straw or bagasse, which was then left to dry and age for a few weeks. It could then be fed to cattle, sheep and other ruminants.

Expensive and relatively large amounts of alkaline substances, such as sodium hydroxide and ammonia, are currently used to

make straw and other fibrous material edible. Without some treatment the important ingredient in straw, cellulose, is mostly inaccessible to the grazing animal's digestive processes.

The sulphuric acid which Professor Richards finds most suitable is about the same strength as that used in car batteries. Other acids also work, but sulphuric acid was chosen because it is readily available in most farming communities.

[Courtesy Australian Information Service Science Newsletter]

## Sports News

### Summer Coaching Camp Programme Gets Momentum

With a view to provide specialised training to the University Sports talent, AIU has introduced a new scheme of University Level Coaching Camps. Under the new scheme specialised training is imparted during the summer vacation to the outstanding University sportsmen/women in ten selected sports disciplines. The sports disciplines are (i) Athletics (M&W), (ii) Badminton (M&W), (iii) Basketball (M), (iv) Basketball (W), (v) Football, (vi) Hockey (M), (vii) Hockey (W), (viii) Volleyball (M), (ix) Volleyball (W), (x) Wrestling. Summer vacation has been chosen, in particular, because this is a period when the university sports cream tends to slack. These camps are organised to keep them trim and in shape during this critical period of their studentship so that they are able to take up sports training seriously when the university reopens for the new academic session. During the coming summer AIU has allotted University Level Coaching Camps to the universities mentioned below under each discipline.

#### 1 Athletics (Men & Women)

Delhi University  
Gandhiji University  
Gujarat University

Guru Nanak Dev University  
Kerala University  
Osmania University  
Punjab University  
Shivaji University

#### 2. Badminton (Men & Women)

Delhi University  
Gauhati University  
Gujarat University  
Guru Nanak Dev University  
Himachal Pradesh University  
Kerala University  
Panjab University  
Ranchi University

#### 3 Basketball (Men)

Berhampur University  
Delhi University  
Guru Nanak Dev University  
Kerala University  
Kurukshetra University  
Madurai Kamaraj University  
Mohan Lal Sukhadia University  
Panjab University

#### 4. Basketball (Women)

Berhampur University  
Delhi University  
Gujarat University  
Guru Nanak Dev University  
Kerala University  
Kurukshetra University  
Punjab University  
Rani Durgavati University

#### 5. Football

Kerala University  
Mysore University  
North Bengal University  
Osmania University  
Panjab University  
Punjab University  
Ranchi University  
Rani Durgavati University

#### 6 Hockey (Men)

Aligarh Muslim University  
Baroda University  
Berhampur University  
Guru Nanak Dev University  
Marathwada University  
Mysore University  
Panjab University  
Ranchi University

#### 7. Hockey (Women)

Delhi University  
Guru Nanak Dev University  
Himachal Pradesh University  
Kerala University  
Kurukshetra University  
Punjab University  
Ranchi University  
Rani Durgavati University

#### 8. Volleyball (Men)

Andhra University  
Gujarat University  
Kerala University  
Kurukshetra University  
Madurai Kamaraj University  
M. L. Sukhadia University  
Panjab University  
Ranchi University

#### 9. Volleyball (Women)

Bharathiar University  
Guru Nanak Dev University  
Himachal Pradesh University  
Kerala University  
Osmania University  
Punjab University  
Ranchi University  
S N D T University

#### 10 Wrestling

Amravati University  
Banaras Hindu University  
Guru Nanak Dev University  
Haryana Agricultural Univ.  
Kurukshetra University  
Marathwada University  
Meerut University  
Shivaji University

# AIU Library

Established in 1965, the AIU Library has acquired over the years a valuable collection of books and documents on Higher Education. Among the topics prominently represented are Educational Sociology, Educational Planning, Educational Administration, Teaching & Teachers' Training, Examinations, Economics of Education and Country Studies. Developing fields of Adult Education, Continuing Education and Distance Education, and Educational Technology are also well stocked. The Library is particularly strong in its collection of reports whether they are on the setting up of different universities or on the state of Higher Education. Files of Annual Reports of different universities are also maintained. Readers are kept informed of the latest acquisitions through our column 'Additions to AIU Library'.

The Library also receives about a 100 periodical titles on Higher Education. All these are indexed regularly and a select list appears every month as 'Current Documentation in Education'.

Doctoral Degrees awarded during the preceding month are reported as 'Theses of the Month' while registrations made for such degrees are flashed as 'Research in Progress'. Bibliographies are also compiled and supplied on demand.

Research scholars and students of education are welcome to use these resources. The Library is situated at 17-B, Indraprastha Marg, New Delhi-110 002. It is open from 10 a.m. to 5 p.m. Monday through Saturday except Second Saturday. Access can also be had through inter library loan for which requisition must be made through your Librarian.

## THESES OF THE MONTH

### A list of Doctoral Theses Accepted by Indian Universities

#### BIOLOGICAL SCIENCES

##### Microbiology

1. Chattopadhyay, Shyamalendu *Extracellular production of glutamic acid and valine by Bacillus sp.* U Burdwan
2. Deuskar, Neelima J. *Immunological studies on Guillain Barre syndrome and other neurological diseases.* U Poona
3. Ingle, Arun Onkarrao *Studies on the microbial degradation of urea.* Nagpur U
4. Mohinder Singh. *Role of Nocardia species in broncho-pulmonary disease.* GNDU, Amritsar
5. Paul, Madhu *Physico-chemical changes in selected legumes and cereals by the growth and metabolism of intestinal microorganisms.* Pb U, Chandigarh
6. Rangan Triveni *Studies on thermostable amylase production by Bacillus ciceriformis.* U Calcutta
7. Ray, Dipak Kumar *Production of glutamic acid by Arthrobacter sp.* U Burdwan

##### Biochemistry

1. Chattopadhyay, Dhrubajyoti *Studies on the mechanism of replication and maintenance of a large number of phage genomes and the nature of their arrangement in the polyphage containing integrated 2 NCI prophages.* U Calcutta
2. Chaudhuri, Tuh *Effect of erythroprotein on the lipid biosynthesis of a rat erythrocyte membrane.* U Calcutta
3. Dattaray, Asimkanti *Studies on nitrate metabolism in Azospirillum brasilense.* U Calcutta
4. Gangopadhyay, Runu *Studies on the mode of action of some antitumour drugs.* U Calcutta
5. Kaphalia, B S *Physical and chemical changes in mammalian red blood cells induced by 1, 2, 3, 4, 5, 6-hexachlorocyclohexane (HCH).* Kum U, Nainital
6. Kunhi, A A Mohammad *Studies on the nucleic acid hydrolysing enzymes of Aspergillus candidus M16a.* U Mysore
7. Lahiri, Prabir *Studies on certain aspects of thyroid hormone action in cold.* U Calcutta

8. Mukhopadhyay, Svamali *Chemical and biochemical studies on reproductive organs.* U Calcutta

9. Pant, P C *Biochemical changes associated with maturity of some vegetables of Kumaun Hills.* Kum U, Nainital

10. Ray, Ranjit *Immunological studies on visceral leishmaniasis with reference to antigen components of Leishmania donovani.* U Calcutta

11. Rai, Siddarthdev *Studies on the interaction of phenolic compounds with abscisic acid in the control of growth and accompanying metabolic activities.* Devi Ahilya, Indore

##### Marine Biology

1. Radha Devi, A *Studies on Cumacea.* U Cochin
2. Thomas, Ivy *Studies on chitinoelastic bacteria in coastal zone.* U Cochin

##### Anthropology

1. Balgir, Ranbir Singh *Demo-genetic investigations among the Hindu and Muslim Gujjars. The two breeding isolates of sub-Himalayan and Himalayan Regions.* Pb U, Chandigarh
2. Bandopadhyay, Pradip Kumar *Leadership pattern in mizo society. A study of four Mizo villages.* Gauhati U
3. Bhatia, Kuldeep Kumar *Genetic structure of an inbred human isolate.* Pb U, Chandigarh

##### Botany

1. Akkijaru, Veera Vikramaraju Narayana Raju *Studies on the fossil of Kamthi beds of Maharashtra and upper Gondwana beds of Andhra Pradesh.* Shivaji U, Kolhapur
2. Alka *Developmental and histochemical studies in some members of families of order Polemoniales.* Meerut U.
3. Anand Prakash *Histopathological studies of root knots in brinjal and tomato.* Meerut U
4. Anis Fatima *An anatomical investigation in the tribe epidendreae (Orchidaceae) of J D Hooker with special reference to an evaluation of inter-relationship of taxa and developmental morphology of stem.* NBU, Rajarammohunpur.

5 Bhattacharyya, Alok *Responses of sunflower plants towards growth retardants with special reference to growth, metabolism and yield* U Burdwan

6 Channy Bala *Studies on leaf spot disease of wheat *Triticum aestivum* as induced by *Helminthosporium sativum** RDV Jabalpur

7 Das, Binay Kumar *Investigation on the hyphomycetous fungi of West Bengal* U Calcutta

8 Datta Svamali *Taxonomic revision of bulbous Liliaceae in India* U Calcutta

9 De Kalvan Kumar *Study on callus tissue of certain legumes. Its differentiation and alteration in protein profile* U Calcutta

10 Dube Bholeshwar *An ecological study of aquatic fungal flora of lakes of Bhopal* Bhopal U

11 Giriya, Akella Rama Lakshmi *Embryological studies in Aizoaceae and phytochemical investigations in a few composite* Andhra U

12 Goel, Anil Kumar *Studies on the phytotoxic effects of certain nematocides and their interaction with gibberellin acid on the growth and development of tomato plant* Meerut U

13 Goel Rakesh Kumar *Comparative biology of some *Alvsiacarpus* species* Mag U Bodhi Gaya

14 Gopalakrishna Bhat K *Grasses and sedges of Coorg and South Kanara Districts of Karnataka. A taxonomic study* U Mysore

15 Gupta Rishendra *Studies on cholinesterase in Bengal gram and probable role of acetylcholine in plants* U Delhi

16 Gupta, Utpal *A study of solanaceous medicinal plants with special interest on their production of the active principle* NBU Rajamahendrapur

17 Jagdish Singh *Induced interchanges and mutations in lentil *Lens culmaris** Med Meerut U

18 Kulshreshtha Praveen *The effect of radiations and chemical mutagens on some pulse crops* Meerut U

19 Mishra, Isihar Manjari *Studies in the biochemistry of serotency in cowpea *Vigna catuanga* Endl coryledons* Sambalpur U

20 Mishra Rajlakshmi *Studies on the biochemical aspects of water stress on seed germination and seedling growth* Utkal U Bhubaneswar

21 Mohanty, Chitta Ranjan *Inheritance of disease resistance in rice with special reference to blast *Pyricularia oryzae* Cav* Utkal U Bhubaneswar

22 Narendra Mohan *Some studies on the effect of gibberellin acid on composition of plants and soil-plant relationships* Kanpur U

23 Prasad N V S R K *Studies on the regulation of intermediary metabolism of *Aspergillus nidulans** U Delhi

24 Ramanjaneyulu, R *Physiological studies on *Corynespora cassicola* (Berk and Curt) W. C. and of the leaf spot disease development of brinjal *Solanum melongana* L* SVU Tirupati

25 Sarma Javanthi Sankara Prasad *Chromosome studies and heterochromatin in different strains of Muridae* U Calcutta

26 Satyanarayana Maguluri *Embryological studies in Verbenaceae and Labiatae* Andhra U Waltair

27 Sharma, Banwari Lal *Effect of brackish water on the morphological, physiological and biochemical characteristics of *Nicotiana rustica* in Bulandshahr District, U P* Meerut U

28 Singh Vidia Ram Ratan *Morphological and experimental studies in *Linum usitatissimum* L. and *Sesamum indicum* L* Meerut U

29 Sreenath, H L *Cytogenetic and tissue culture studies in some commercially important species of aromatic grasses* U Mysore

30 Tarkeshwar Singh *Genetic analysis of the characters contributing towards grain and total dry matter yield in common wheat *Triticum aestivum* (L) em Thell* Kanpur U

## Zoology

1 Chalapathy Rao, M V *Studies on the muscle protein and associated metabolism of fish *Tilapia mossambica* Peters during starvation and refeeding* SVU, Tirupati

2 De Jaykrishna *Scanning electron microscopy of human hairs. A comparative study* U Calcutta

3 Guha Shesha *A study of chromosomes. Some hematological aspects and estimation of enzymes in certain species of fishes* RDV Jabalpur

4 Jindal Rajinder *Limnological studies on some freshwater ponds of North India*, Pb U Chandigarh

5 Kanaka Durga M R *Studies on the intertidal poriferans and their associates at Visakhapatnam Coast* Andhra U, Waltair

6 Khan A H *Chemoarchitectonics of the central nervous system of turtle *Lissemys punctata* Grunosa with special reference to medulla spinata, rhombencephalon and mesencephalon* Saur U Rajkot

7 Krishna Rao Garimella Venkata *Studies on respiration of the fiddler crabs *Uca annulipes* Latreille and *Uca triangularis* Milne-Edwards from Visakhapatnam Harbour* Andhra U Waltair

8 Kuthiala Arun *Sterols their metabolism and the inhibitive effects of 25-azasteroids in *Spodoptera litura** F U Delhi

9 Malik Iqbal *A study of selected behavioural traits of rhesus monkeys in free ranging environments* Kanpur U

10 Mandal Dipakranjan *Investigation on protozoan parasites of wild mammals of Sundarbans and Betla forest* U Calcutta

11 Marwah Ranjana *Studies on the effect of *Nematus* on *Meloidogynce incognita** Pb U Chandigarh

12 Mehrotra Beenu *Morphology of *Aphranicola vishnou* (Mathur 1983) (Cimicidae Heteroptera). A common blood sucking ectoparasite on *Scotophilus temminckii* Wroughton (Thomas 1897) (Mictrochiroptera)* Kanpur U

13 Pradhan Gagan Bihari *Ecological studies on soil nematodes of some tropical ecosystems and their relationship with rhizosphere, environmental factors, herbage production and decomposition of organic matter* Sambalpur U

14 Rajamani, S *Factors affecting gall midge resistance in paddy* Utkal U Bhubaneswar

15 Ramanjaneyulu Javaji Venkata *Cytological studies on some digenetic trematodes* Andhra U Waltair

16 Sanjeev Kumar *Cytochemical, biochemical and histopathological studies on *Bunostomum trigonocephalum* (Rud 1808) Railist 1902* Meerut U

17 Saxena Aparna *Effects of the solar eclipse of February 16 1980 on mice of the *Lacca strain** Pb U Chandigarh

18 Sharma Vijay Prakash *Neurohistological and histochemical studies on the alimentary tract of poikilothermal vertebrates* Bhopal U

19 Shrivastav, R N *Histomorphology of the pituitary gland and its correlation with the gonadal cycle of *Harudo fluviicola* Blyth* Vikram U, Ujjain

20 Shrivastava Sandhya *The effects of organic nutrients on the endocrine glands in pigeons* Bhopal U

21 Singhal Lalit Kumar *Pole of the photo-periodism and its relationship with circadian rhythms of activity in a tropical bird* Kanpur U

22 Sinha Maniranjana *Biology and fishery of the common catfish *Plotosus canius** U Calcutta

23 Sinha, Neeta *Carcinogenic effect of small doses of Co<sup>60</sup> radiation during intra-uterine life* Kanpur U

24 Srinivasa Murthy, K *Modulation of carbohydrate and associated metabolism in the selected tissues of fresh water mussel *Lamellidens marginalis* during induced methyl water pollution stress* SVU, Tirupati

25 Thomas John *Effects of some formulated diets on the growth, survival and yield of common carp, *Cyprinus carpio* var *communis** PAU, Ludhiana

26 Vaidya Vasundhara *Limnology of river Khan (Indore) with special reference to pollution and eutrophication* Bhopal U

27 Venkateswara Rao Thalupunuri *Studies on the effect of temperature and salinity on the physiology of Pontardrilus bermudensis Beddard (Annelida Oligochaeta) from Visakhapatnam harbour* Andhra U, Waltair

#### Medical Sciences

1 Gurcharan Kaur *Regulation of oxidative pathways in rat brain under hormonally and drug induced conditions* JNU Delhi

2 Iyengar, Bhanu *Neuroectoderm primitive streak interactions with reference to copper catalysis* U Delhi

3 Mayanil, Chandra Shekhar Keshao *Regulation of ATPase and monoamine metabolising enzymes in rat brain* JNU, Delhi

#### Agriculture

1 Ajit Singh *The standardization of the foliar sampling technique in peach, Prunus persica* Batch PAU Ludhiana

2 Anserwadekar, Kishan Wamanrao *Studies on the N, P, K, nutrition spacing and their effects on the vase life with different chemicals in Gladiolus grandiflora* CI HB Pitt Marath Krishi Parbhani

3 Babasaheb Ghorpade Prakash *Evaluation of combining ability analysis in relation to cotton breeding* PAU Ludhiana

4 Badwal S S *Genotype-environment interaction in a diallel cross of Indian mustard, Brassica juncea (L) Czern and Coss* Meerut U

5 Bandyopadhyay Biswanath *Some fundamental studies on the mixtures of organic and inorganic components of soils* NBU, Rajarammohunpur

6 Gurjant Singh *Effect of pesticidal and fertilizer applications on pest complex and growth of green gram Vigna radiata (L) Wilczek* PAU Ludhiana

7 Handa, Dinesh Kumar *Studies on molya disease Heterodera avenae Wall of wheat and barley with special emphasis on its control* U Raj, Jaipur

8 Jag Pal Singh *Nutritional studies in mustard Brassica spp in relation to soil test values* CSAT, Kanpur

9 Jeshi, A K *Biochemical and physiological studies in relation to hybrid vigour in plants* Saur U Rajkot

10 Kuldip Singh *Studies on the lentil rust caused by Uromyces fabae (Pers) de Barv* PAU, Ludhiana

11 Mahipal Singh *Differential impact of milk co-operatives in rural Uttar Pradesh* Kanpur U

12 Mallick, Abdul Sattar *Genetic architecture of yield and quality components of sorghum Sorghum bicolor (L) Moench* CSAT, Kanpur

13 Malik, Sukumar *Genetic nature of some agronomic traits of rice associated with adaptation in rainfed low lands* U Calcutta

14 Mathauda Surinderjit Singh *Growth pattern and yield response of rice cultivars under variable watering and planting schedules* PAU, Ludhiana

15 Mir, Syeedullah *Erodibility studies of some soils of Kashmir Valley as related to their conservation and management* CSAT, Kanpur

16 Mukku, Kuldeep Nath *Constraints to apple production under varying conditions of Kashmir Valley* CSAT, Kanpur

17 Pandey, Ashok Kumar *Some studies on soil plant relationship of barley Hordeum vulgare L and paddy, Oryza sativa L plants in relation to chelate supply* Kanpur U

18 Ravindran, A *Electrophysiological investigations in drought resistant and susceptible varieties of wheat Triticum aestivum L* JNU Delhi

19 Ray, Rabindranath *Study of orchard efficiency analysis of Litchi, Litchi chinensis* U Calcutta

20 Robert Cecil, S *Mineral nutrition of the coconut palm, Cocos nucifera L in health and disease with special emphasis on calcium and magnesium* U Ker Trivandrum

21 Sarb Mittar *Genetic variability and pollination behaviour in egyptian clover Trifolium alexandrinum L* PAU, Ludhiana

22 Shirjooposht Moazam Hassanpour Asil *Influence of nitrogen fertilizer, irrigation and preharvest foliar application of maleic hydrazide on postharvest behaviour of onion, Allium cepa L bulbs under several storage conditions* MP Krishi, Rahuri

23 Sukhbir Singh *Nitrogen economy through Azotobacter at different levels of nitrogen and phosphorus for important varieties of maize* Meerut U

24 Suresh Chandra *Studies on the effect of fertilizer-insecticide combinations on the insect population and vegetative characters of bhindi Abelmoschus esculentus (L) Moench* CSAT Kanpur

25 Surinder Kumar *Drainage pattern of bare and tilled silt loam sandy loam and loamy sand soils as affected by zero-time water profile and evaporativity* PAU, Ludhiana

26 Tewari Ram Kumar *Physico-chemical effects of certain modern insecticides on sugarcane leaf hopper, Pyrilla perpusilla Wlk (Hemiptera Fulgoroidea) and its ectoparasite, Epipyrops malanolenca Flet (Lepidoptera Epipyropidae)* CSAT Kanpur

27 Tomar, Harpal Singh *Efficiency of selection for yield per se as compared to selection for yield components in wheat, Triticum aestivum L* Meerut U

28 Wani Mohammad Yousuf *Transformation of nitrogen, phosphorus and zinc in soils of Kashmir and their availability to paddy crop* CSAT Kanpur

#### Veterinary Science

1 Bugalia, Naumihal Singh *Biochemical and histochemical studies on bovine endometrium* PAU, Ludhiana

2 Chaudhry Ravi Kumar *Biochemical studies on sarcocysts of Sarcocystis fusiformis of the buffalo Bubalus bubalis* JN Krishi Jabalpur

3 Pangawkar, Govind Rajaram *Biochemical and cytomorphological studies on normal and subfertile bull semen* PAU Ludhiana

4 Nandi Sambhunath *Investigation of bovine haematuria in India* U Calcutta

5 Singh, Bhubaneshwar Prasad *Studies on bovine trypanosomiasis with special reference to diagnosis and therapy* PAU, Ludhiana

6 Srivastava, Anil Kumar *Pharmacokinetics and therapeutic evaluation of oximes in buffalo calves* PAU, Ludhiana

## CURRENT DOCUMENTATION IN EDUCATION

A list of select articles culled from periodicals received in AIU Library during February, 1984

### EDUCATIONAL PHILOSOPHY

Hawkins, Hugh A history of creative tension *Change* 15(7), 1983, 34-7

### EDUCATIONAL PSYCHOLOGY

Hattie, John The tendency to omit items Another deviant response characteristic *Ednl Psy Measurement* 43(3), 1983, 1041-5

Ryan, Joseph P Introduction to latent trait analysis and item response theory *New Directions Testing Measurement* (19), 1983, 49-64

Saxena, A K Hostility and alienation among university students during emergency and after emergency *ICSSR Res Abs Q* 10(3 & 4), 1981, 9-21

### EDUCATIONAL SOCIOLOGY

Adisesiah, Malcolm S Role of universities in international co-operation for development *Bull Unesco Asia* (24), 1983, 95-108

Booth, Tony Policies towards the integration of mentally handicapped children in education *Oxford Rev Edn* 9(3), 1983, 255-68

Jacob P S Priming for remedial education *New Frontiers Edn* 13(4), 1983, 12-16

### EDUCATIONAL ADMINISTRATION

Elton Lewis Conferences Making a good thing rather better? *British J Ednl Tech* 14(3), 1983, 200-15

Ganesh, S R Building management education institutions Processes and performance *ICSSR Res Abs Q* 10(3 & 4), 1981, 67-89

Nair T K D Decision making A framework for educational institutions *Indian Edn* 13(10-11) 1984, 17-9

### TEACHING

Daloz, Laurent A Mentors Teachers who make a difference *Change* 15(6), 1983, 24-7

### EDUCATIONAL RESEARCH

Seshadri C Research in philosophy of education *Indian Ednl Rev* 18(4), 1983, 99-105

### EDUCATIONAL TECHNOLOGY

Barker, P G and Singh, R A practical introduction to authoring for computer assisted instruction Part 2 PILOT *British J Ednl Tech* 14(3), 1983, 174-200

Hambleton, Ronald K and others Applications of micro-computers to classroom testing *New Directions Testing Measurement* (19), 1983, 65-77

Hawkrige, David and McCormick, Bob China's television universities *British J Ednl Tech* 14(3), 1983, 160-73

### EVALUATION

Ansley, Timothy N and Forsyth, Robert A Relationship of elementary and secondary school achievement test scores to college performance *Ednl Psy Measurement* 43(3), 1983, 1103-12

Gillmore, Gerald M and others The dependability of student evaluations of teaching effectiveness Matching the conclusions to the design *Ednl Psy Measurement* 43(3), 1983, 1015-18

Hambleton, Ronald K and De Grujter, Dato N M Application of item response models to criterion-referenced test item selection *J Ednl Measurement* 20(4), 1983, 355-67

Jones, Douglas H and Szatrowski, Ted H. On the statistical determination of content validity *Ednl Psy Measurement* 43(4), 1983, 995-1004

Michael, Joan J and others The prediction of academic achievement in graduate study in education *Ednl Psy Measurement* 43(3), 1983, 1133-9

Natarajan, K V Evaluation system in Indian conditions. *J Indian Edn* 9(1), 1983, 42-4

Pandey, Devesh Dutt Uses and abuses of periodical test system in evaluation of classroom learning *Indian Ednl Rev* 18(4), 1983, 135-42

Wiegand, Patrick Objective tests in geography at 16 plus *Ednl Res* 24(4), 1982, 308-9

### ECONOMICS OF EDUCATION

Garg, V P Cost-analysis for educational planning Some basic issues *New Frontiers Edn* 13(4), 1983, 40-9

Hussain, M A The role of education in economic development in India An explanatory analysis *Indian Ednl Rev* 18(4), 1983, 15-27

Lynton, Ernest A Reexamining the role of the university *Change* 15(7), 1983, 18-23, 53

### EDUCATIONAL JOURNALISM

EDUCATIONAL JOURNALISM *J Indian Edn* 9(2), 1983 1-84

### ADULT EDUCATION

Fletcher, Colin Adult education and community needs Towards a distinctive university extra-mural contribution *Studies in Adult Edn* (15), 1983 60-6

Hawkrige, David Evaluation of the open university *Hr Edn in Europe* 8(3), 1983, 39-45

Jennings, Bernard The open-door university A strategy for continuing education leading to degrees *Studies in Adult Edn* (15), 1983, 47-59

Ohliger, John Reconciling education with liberty *Prospects* 13(2), 1983, 161-79

Ram Reddy, G Distance education has come to stay *Indian Edn* 13(10-11), 1984, 24-8

Rossmann, Mark H A comparison of skills of teaching as perceived by British university administrators, tutors and those with both responsibilities *Studies in Adult Edn* (15), 1983 85-91

Rumble Greville Distance higher education—experiences and evaluation Distance teaching universities in Europe *Hr Edn in Europe* 8(3), 1983, 5-14

### COMPARATIVE EDUCATION AND COUNTRY STUDIES

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## CLASSIFIED ADVERTISEMENTS

### GURUKULA KANGRI VISHWAVIDYALAYA HARDWAR

No GKV/Estt/84

Dated - 15th March, 1984

#### Advertisement

Application in duplicate on plain paper with attested copies of testimonials, certificates, etc are invited for the following post so as to reach the undersigned with postal order payable to Registrar, Gurukula Kangri Vishwa-vidyalaya, value Rs 10/- upto 15th April, 1984

**Professor Philosophy Grade**  
Rs 1500-60-1800-100-2000-125-2500

**Qualifications** An eminent scholar with published work of high quality actively engaged in research in the field of basic texts in Indian Philosophy preferably in the field of Nyaya and Advaita Vedanta. Deep and fluent knowledge in Sanskrit essential. Ten years experience of teaching and/or research. Experience of guiding research at doctoral level.

#### OR

An outstanding scholar who has made significant contribution to knowledge with established reputation in the field of basic texts in Indian Philosophy as stated above.

- Note**
- (i) Female candidates need not apply.
  - (ii) Qualifications may be relaxed by the Selection Committee for experienced persons.
  - (iii) Higher start may be given to the deserving candidates.
  - (iv) Teachers will be expected to do Research and extension work.
  - (v) Applicants should mention names of two referees not related to them.
  - (vi) Three passport size photograph should be attached with the application.

Dr J.S. Sengar  
REGISTRAR

### INDIAN INSTITUTE OF TECHNOLOGY MADRAS

Advertisement No IITM/R/3 84

Applications are invited for the following posts at this Institute

**1 Lecturer in German (One post)** in the pay scale of Rs 700-40-1100-50-1600 plus allowances for the Department of Humanities & Social Sciences

#### **Essential Qualifications**

- (i) A good academic record with Master's degree in German language.
- (ii) 2 years experience in teaching language & literature and/or research.

#### **Desirable Qualifications**

- (a) Experience with scientific & technical German,
- (b) language laboratory experience,
- (c) ability to prepare teaching materials,
- (d) ability to guide research candidates,
- (e) knowledge of other foreign language(s)
- (f) Library experience,
- (g) typing ability (German)

**2 Assistant Librarian (One post)** in the pay scale of Rs 700-40-1100-50-1600 plus allowances

#### **Essential Qualifications**

- (i) Good academic record with at least a high second class Master's degree in Electronics Engineering or Computer Science.
- (ii) Master's degree in Library Science with first or high second class.

#### **Desirable Qualifications**

Experience in Programming using a high level language like FORTRAN, BASIC or PL/I preferably in Library field.

**3, Assistant Stores & Purchase Officer (One post)** in the pay scale of Rs 700-40-900-EB-40-1100-50-1300 plus allowances

#### **Qualification & Experience**

- (a) Must be a graduate

- (b) Minimum of 7 years of experience in purchase and stores of reputed organisation

- (c) Knowledge of procurement of indigenous stores, inventory control, import, shipping, customs clearance and stores maintenance.

Posts at Sl Nos 2 & 3 are reserved for Scheduled Caste/Tribe candidates for whom the qualification regarding experience is relaxable at the discretion of the competent authority, if at any stage of selection the competent authority is of the opinion that sufficient number of candidates from these communities possessing the requisite experience are not likely to be available to fill up the vacancies reserved for them.

For application forms, please address the REGISTRAR, INDIAN INSTITUTE OF TECHNOLOGY, MADRAS 600 036 with a self addressed stamped (Re 0 90) envelope (26 cm x 11 cm). Persons in the service of Government establishments and Public Sector undertakings should apply through proper channel, otherwise their applications will not be considered. Completed applications with Indian Postal Order to the value of Rs 7 50 (Rs 1 90 for SC/ST candidates) should be sent to the Registrar. The last date for the receipt of completed applications is 20-4-1984.

S Santanagopalan  
REGISTRAR

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A Weekly Journal of Higher Education & Research  
(Published on 1, 8, 16 & 23 of every month)

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**ALIGARH MUSLIM  
UNIVERSITY  
ALIGARH**

**Advertisement No 37/83-84**

Applications on the prescribed form are invited for the following posts

**Readers**

Scale of Pay Rs 1200-50-1300-60-1900 plus allowances

1 Reader in West Asian Studies (Geography) Centre of West Asian Studies

2 Reader in West Asian Studies (Economics) Centre of West Asian Studies

3 Reader in West Asian Studies (Political Science) Centre of West Asian Studies

**Qualifications**

**I—Essential** (a) A first or a high second class Master's degree in the subject concerned of an Indian University or an equivalent foreign qualification

(b) A research degree of a Doctorate standard or published work of a high standard and

(c) At least five years experience of teaching post-graduate classes and some experience of guiding research

**II—Desirable** For Posts Nos 1 and 2 Reader in West Asian Studies (Geography) (Economics) Centre of West Asian Studies

First hand knowledge of current West Asian Geography Economic trends Working knowledge of Arabic or any other West Asian Language

**For Post No 3 Reader in West Asian Studies (Political Science) Centre of West Asian Studies**

First hand knowledge of West Asian Political trends Working knowledge of any other West Asian Language or Modern European Language

**Lecturers**

Scale of Pay Rs 700-40-1100-50-1600 plus allowances

4 Lecturer in West Asian Studies (Economics) Centre of West Asian Studies

5 Lecturer in West Asian Studies (Sociology) Centre of West Asian Studies

6 Lecturer in West Asian Studies (Arabic) Centre of West Asian Studies

**Qualifications**

**I—Essential** (a) A Doctor's degree or research work of an equally high standard

(b) Consistently good academic record with first or high second class (B in the seven point scale) Master's degree in the relevant subject or an equivalent degree of a foreign University

Having regard to the need for developing inter-disciplinary programmes the degrees in (a) and (b) above may be in relevant subject

Provided that if the Selection Committee is of the view that the research work of a candidate as evident either from his thesis or from his published work is of very high standard, it may relax any of the qualification prescribed in (b) above

Provided further that if a candidate possessing a Doctor's degree or equivalent research work is not available or is not considered suitable, a person possessing a consistently good academic record (weightage being given to M Phil or equivalent degree or research work of quality) may be appointed provided he has done research work for at least two years or has practical experience in a research Laboratory/Organisation on the condition that he will have to obtain a Doctor's degree or give evidence of research work of equivalent high standard within five years of his appointment failing which he will not be able to earn future increments until he fulfils these requirements

**II—Desirable** Working knowledge of Arabic or any other West Asian Language

Higher initial start may be given to candidates possessing exceptional qualifications and experience Candidates interviewed may be paid contribution towards their T.A equal to one single second class Railway fare only

Prescribed application forms and instructions may be had from the Assistant Registrar (Selection Committees) Registrars Office A M U, Aligarh on payment of lump sum amount of Rs 5 - in cash (to be deposited in the Cash Section, Finance Office A M U, Aligarh) or through an Indian Postal Order payable to the Finance Officer A M U, Aligarh either personally or by sending a self-addressed Stamped envelope of 23 x 10 cm Last date for receipt of applications is 21st April, 1984 (upto 4 00 P M only) Incomplete applications and those received late will not be considered

**Note** Suitable persons may be kept on panel for future appointment

Zamir Ahmed Khan  
REGISTRAR

**THE MAHARAJA SAYAJIRAO  
UNIVERSITY OF BARODA**

**BARODA-390002**

**Notification No 10**

**Dated 27 2 1984**

Applications are invited for the following posts under the University School of Management Studies and Research, presently in the Faculty of Commerce

The Prescribed Forms will be available up to 28-4-1984 alongwith the details of Qualifications and Specialisations from the undersigned on pre payment of Crossed Indian Postal Order of Rs 2 00 (Rs 00 50 for members of SC/ST) payable to the Registrar, M S University of Baroda alongwith a self-addressed envelope of 30 cms x 12 cms for each post The Form will be available in person during working days between 11 30 a m to 2 00 p m

The applicant at the time of requesting for the prescribed forms should

mention very specifically the Post Number also for which the forms are required The SC/ST applicants will attach a Certificate to this effect

**Posts**

1 Professor of Accounts (Financial Management, Managerial Accounting Tax Management)

2 Professor for Business Economics (Managerial Economics, Labour Economics)

3 Professor of Commerce Including Business Administration (Personnel Management, Organisational Behaviour)

4 Professor of Marketing (Marketing Research, Consumer Behaviour Quantitative Techniques)

5 Professor of Production Management

6 Lecturer in Organisational Behaviour

7 Lecturer in Marketing

**Scale of Pay**

Professor Rs 1500-60-1800-100-2000-125-2-2500

Lecturer Rs 700-40-1100-50-1300-Assessment-50-1600

The Application Form duly completed be sent to the Registrar M S University of Baroda, Baroda-2 alongwith a Crossed Indian Postal Order for Rs 10 00 (Rs 2 50 ps for SC/ST applicant) for the posts of Professor and for Rs 8 00 (Rs 2 00 for SC ST applicant) for the posts of Lecturer payable to the Registrar M S University of Baroda on or before 19-5-84

Applications on plain paper will not be considered

The candidates called for interview will have to come at their own expenses

REGISTRAR

**UNIVERSITY OF CALICUT**

**Calicut University P O 673 635**

**No Ad F2/2136 84**

**Dated 5-3-1984**

**Notification**

1 Applications are invited from qualified candidates for appointment to the post of Registrar of the University of Calicut The post carries the scale of pay of Rs 1650-75-2175 and usual allowances

2 Candidates should have a First or Second Class Post-graduate degree and five years teaching experience at University level and about 5 years of administrative experience in a responsible post including management of staff in a University or College or similar institutions

Age Between 40 and 50 years

3 Applications on plain paper containing details of qualification, experience age etc along with true copies of relevant certificates and a crossed postal order for Rs 10,- drawn in favour of the FINANCE OFFICER, UNIVERSITY OF CALICUT and payable at CALICUT UNIVERSITY POST OFFICE should reach the undersigned on or before April 10, 1984

REGISTRAR

**RANI DURGAYATI  
VISHWAVIDYALAYA  
JABALPUR**

No. Estt 84 110

Dated 1-3-84

**Notification**

The last date for receipt of applications (on prescribed forms) for one post of Reader in the Department of Journalism and Mass Communication as notified vide advertisement No. Estt/84 118 dated 8-2-1981, is hereby extended upto the 20th April 1984

REGISTRAR

**ALL-INDIA INSTITUTE OF  
MEDICAL SCIENCES**

Advertisement No 2 84

Applications on prescribed forms are invited so as to reach the Registrar (Academic) All-India Institute of Medical Sciences, New Delhi 110029 by 10th April, 1984 for selection of Junior Residents, Senior Residents and admission to other postgraduate courses for July, 1984 session

**I Junior Residency  
(Postgraduate courses)**

**1 M D**

- |                                 |   |
|---------------------------------|---|
| 1 Anaesthesiology               | 2 |
| 2 Biochemistry                  | 1 |
| 3 Biophysics                    | 1 |
| 4 Dermatology & Venereology     | 1 |
| 5 Forensic Medicine             | 1 |
| 6 Medicine                      | 3 |
| 7 Microbiology                  | 1 |
| 8 Obst & Gynaecology            | 2 |
| 9 Ophthalmology                 | 9 |
| 10 Paediatrics                  | 2 |
| 11 Pathology                    | 2 |
| 12 Psychiatry                   | 1 |
| 13 Pharmacology                 | 1 |
| 14 Physiology                   | 2 |
| 15 Preventive & Social Medicine | 2 |
| 16 Radiodiagnosis               | 1 |
| 17 Radiotherapy                 | 1 |

**2 M S**

- |                       |   |
|-----------------------|---|
| 1 Anatomy             | 2 |
| 2 Orthopaedics        | 1 |
| 3 Otorhinolaryngology | 1 |
| 4 Surgery             | 3 |

**Eligibility**

A candidate must possess MBBS degree of the AIIMS or of a University recognised by this Institute and must have completed the required period of pre-registration Internship rotating housemanship in a recognised hospital

**II First year Junior Residency (House Job) in Dental Surgery**

No of seats—3

**III MHA (Master in Hospital Administration)**

IV Ph D in Anatomy, Biochemistry, Biophysics Community Medicine Forensic Medicine, Medicine, Microbiology, Nuclear Medicine, Pathology Paediatrics Physiology & Radiotherapy

Facilities for Ph D in Bio-chemistry, Microbiology and Pharmacology are also available at Dr R P Centre for Ophthalmic Sciences

**M Sc**

Anatomy, Biochemistry, Biophysics, Drug Assay Pharmacology, Physiology

**Qualifications**

M Sc (Drug Assay) B Pharma or B Sc (Hons) Human Biology of AIIMS with 60% marks in aggregate

M Sc Anatomy Biochemistry, Biophysics Pharmacology & Physiology

B Sc (Hons) Human Biology of the AIIMS or B Sc (Life Sciences) or B V Sc or B Sc (Hons) in the respective subjects or MBBS with atleast 60% marks in aggregate in any of the above examinations

V Senior Residency and admission to post-doctoral courses leading to the award of degree of M Ch DM

**M Ch**

- |                      |                             |
|----------------------|-----------------------------|
| 1 Paediatric Surgery | One post (Reserved for S C) |
| 2 Urology            | Two posts                   |

**DM**

- |              |           |
|--------------|-----------|
| 1 Cardiology | Two posts |
| 2 Neurology  | One post  |

**Senior Resident Only**

- |   |                                   |
|---|-----------------------------------|
| 1 Dermatology & Venereology                     | One post (Reserved for S C)       |
| 2 Paediatrics                                   | One post                          |
| 3 Medical Oncology at IRCH                      | Two posts (One reserved for S T)  |
| 4 Radiodiagnosis                                | Four posts (One reserved for S T) |
| 5 Radiodiagnosis at Neuro Sciences Centre—AIIMS | One post                          |
| 6 Radiotherapy                                  | One post (reserved for S C)       |
| 7 Radiotherapy at IRCH                          | Two posts (One reserved for S C)  |
| 8 Rehabilitation & Art Limbs                    | One post (Reserved for S C)       |

**Tutors**

- |                                |                                    |
|--------------------------------|------------------------------------|
| 1 Anatomy                      | Four posts (One reserved for S T)  |
| 2 Forensic Medicine            | One post                           |
| 3 Microbiology                 | Two posts                          |
| 4 Medical Physics at IRCH      | One post                           |
| 5 Pathology                    | One post                           |
| 6 Pharmacology                 | Three posts (Two reserved for S C) |
| 7 Physiology                   | Two posts (One reserved for S C)   |
| 8 Preventive & Social Medicine | Two posts (One reserved for S T)   |

**Qualifications**

A postgraduate degree diploma in the respective discipline

**Pay Scale**

Junior Residents Rs 500-50-600/- emoluments

Senior Residents Rs 650-30-710 - + postgraduate allowance of Rs 100 - and Rs 50 - per month for holder of postgraduate degree and diploma respectively

Tutors Rs 650-30-710 - postgraduate allowances of Rs 100 - per month to those holding MD MS degree

**Upper Age Limit**

For Senior Residents (where post-doctoral courses are not available) and Tutors—30 years, relaxable for Scheduled Caste and Scheduled Tribe candidates upto a maximum of five years

**General Information**

For further details prospectus may be consulted

- (i) 33% of the total of the postgraduate seats are reserved for the AIIMS graduates
- (ii) 20% of the total of the postgraduate seats are reserved for the candidates belonging to Scheduled Caste Tribe communities
- (iii) 5% of the total seats for postgraduate courses are reserved for those who have served in the rural areas for more than 2 years or doing private practice in rural areas having less than 5 thousand population for more than 2 years medical graduates of backward areas and those who are working under the Family Welfare Programme

The application forms and other information can be obtained from the office of the Registrar (Acad) on payment of Rs 5 - by crossed postal order payable to the Director All-India Institute of Medical Sciences New Delhi or can be obtained personally against postal order for Rs 5 - on working days from the office of the Registrar (Academic)

The forms by post shall be issued only upto 2nd April, 1984

The candidates in employment must forward their application through proper channel. In case candidates anticipate delay in the transit of their applications through proper channel they must send an advance copy so as to reach before the closing date

Prescribed form for the post of Senior Residents Tutors where post-doctoral (DM/MCh) courses are not available can be obtained personally or by sending a self-addressed envelope with 80 paise stamp from the office of the Registrar (Academic)

For Junior Residency (MD/MS) course a candidate can apply maximum in two subjects. In case a candidate wishes to apply for two subjects he should submit only one form indicating both the choices—in order of preference and enclose postal order for Rs 60 - In case of applying for one subject a postal order for Rs 30 - only to be enclosed with the application. For other courses separate application form for each subject discipline be used

**Note** While sending the request for prospectus it may clearly be indicated on the top of the envelope the course post for which the request is being sent